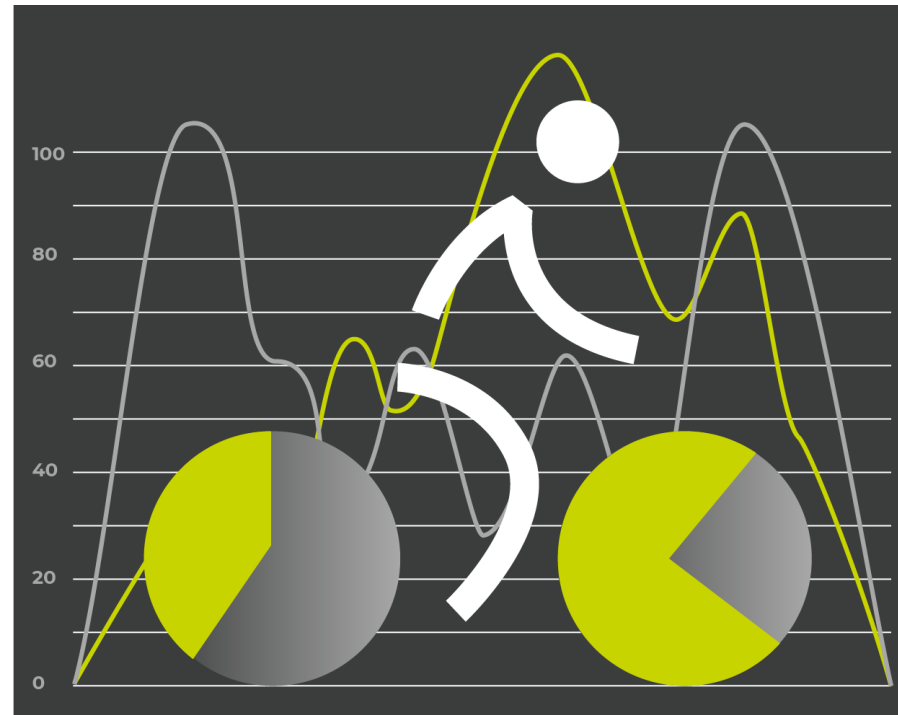




Bikes Count:

Lessons from the 2022 Data Competition Winners



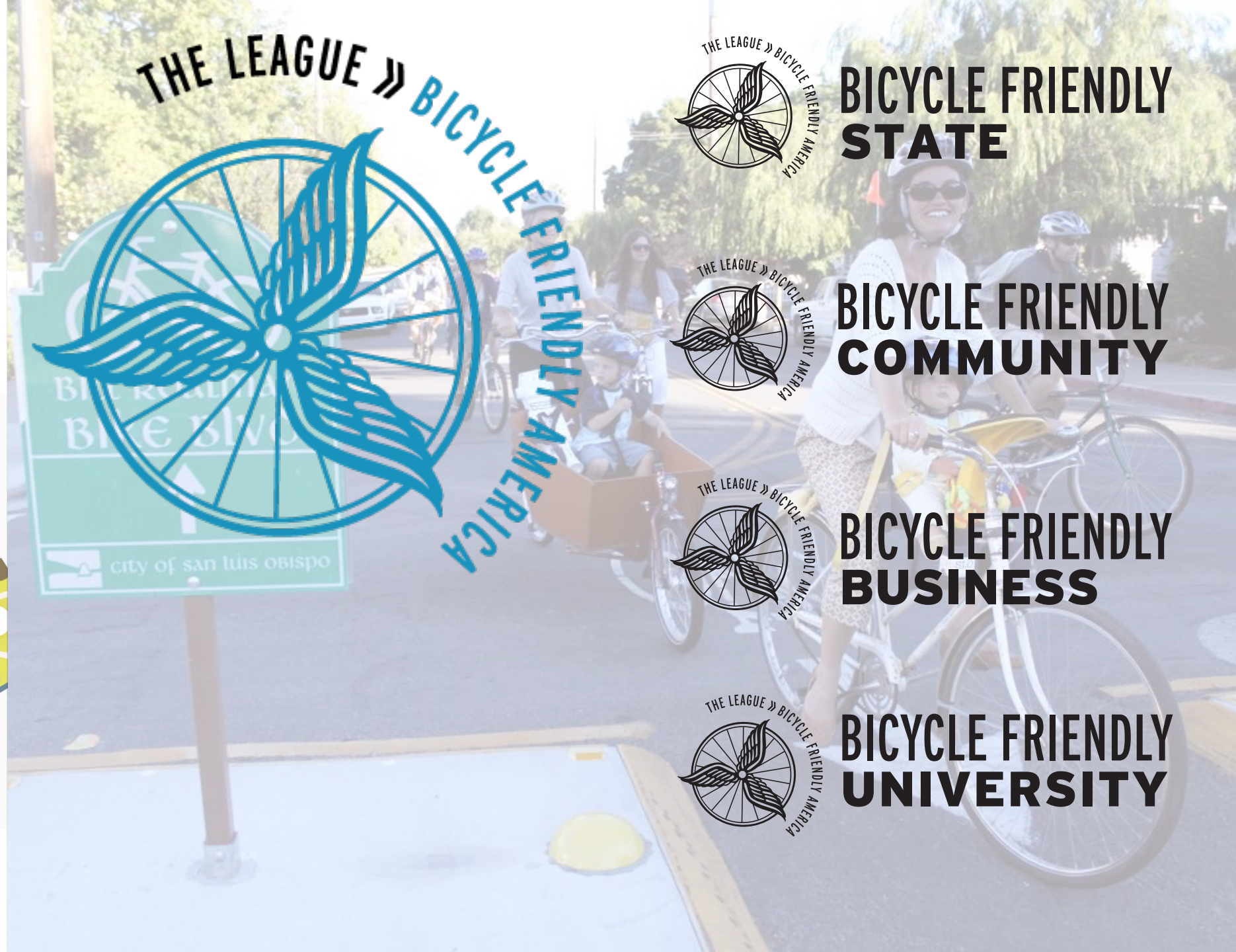
Co-hosted by Eco-Counter and the League of American Bicyclists
October 26, 2022



JOIN THE LEAGUE OF AMERICAN BICYCLISTS

TOGETHER, LET'S BUILD THE MOVEMENT FOR SAFER STREETS!





THE LEAGUE » BICYCLE FRIENDLY AMERICA



**BICYCLE FRIENDLY
STATE**



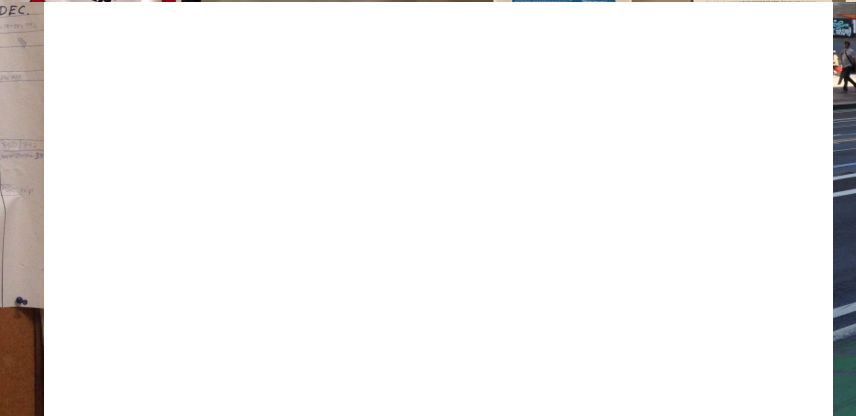
**BICYCLE FRIENDLY
COMMUNITY**

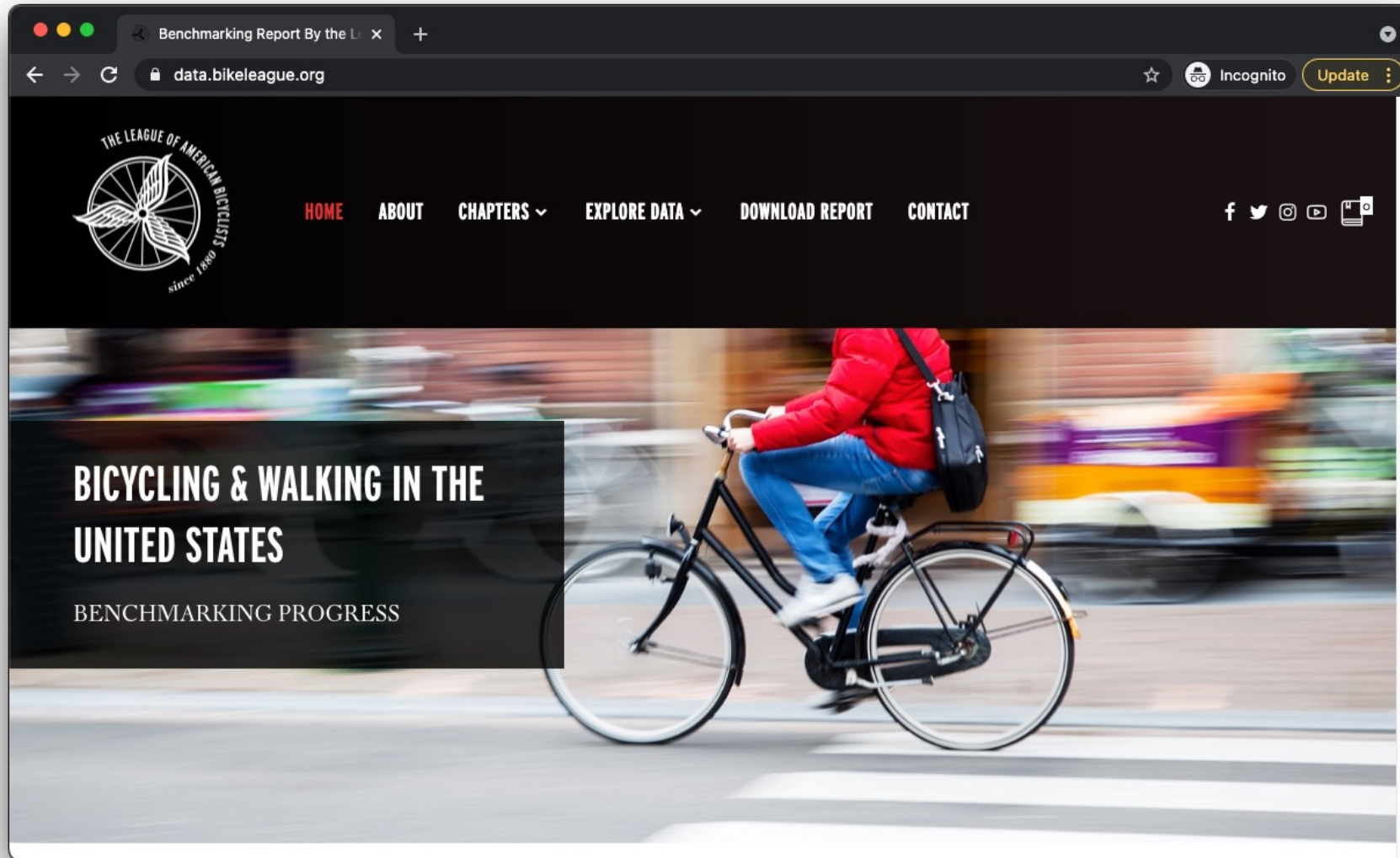


**BICYCLE FRIENDLY
BUSINESS**

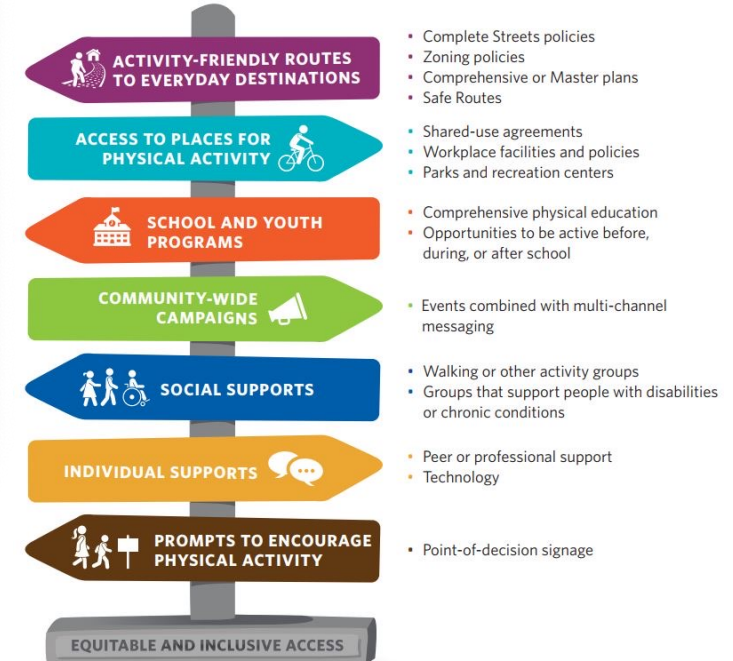


**BICYCLE FRIENDLY
UNIVERSITY**





data.bikeleague.org



Rates of Active Commuting

Rates of Active Commuting

In most cities including in the Benchmarking Project public transit has the largest share of non-car commuting. This chart is sorted by public transit as a share of commutes to work, showing its importance but also where biking and walking to work play a larger role.

■ % Public Transit (excluding Taxicab) ■ % Walk ■ %Bike

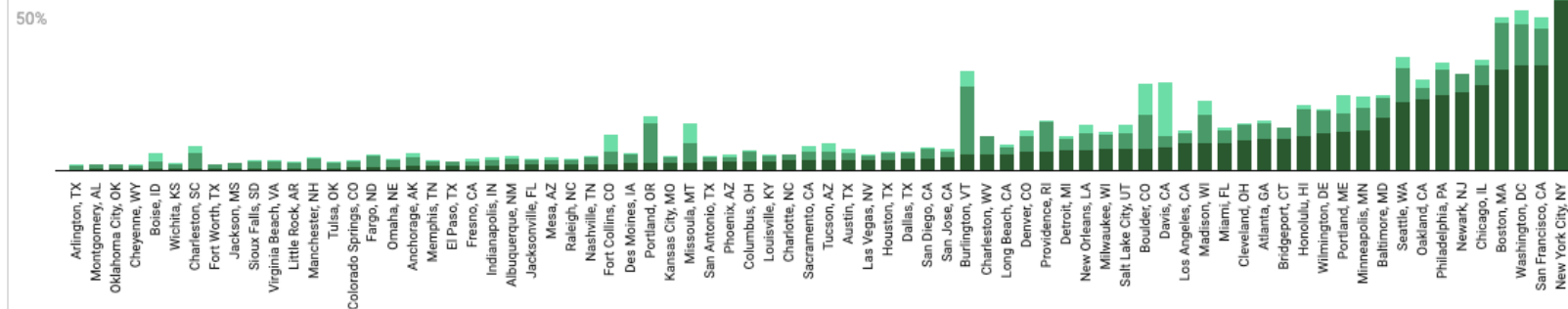
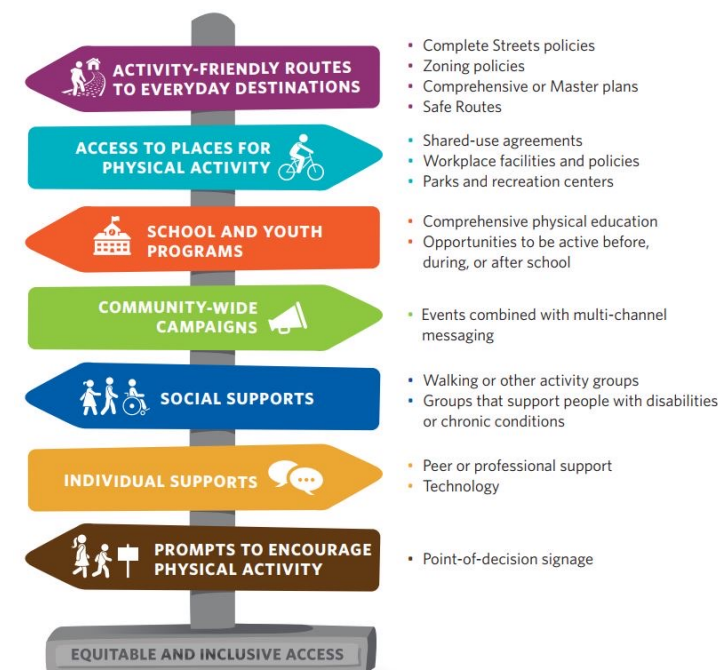


Chart: The League of American Bicyclists • Source: [Census Bureau S0801 Data Table](#) • [Get the data](#) • Created with [Datawrapper](#)

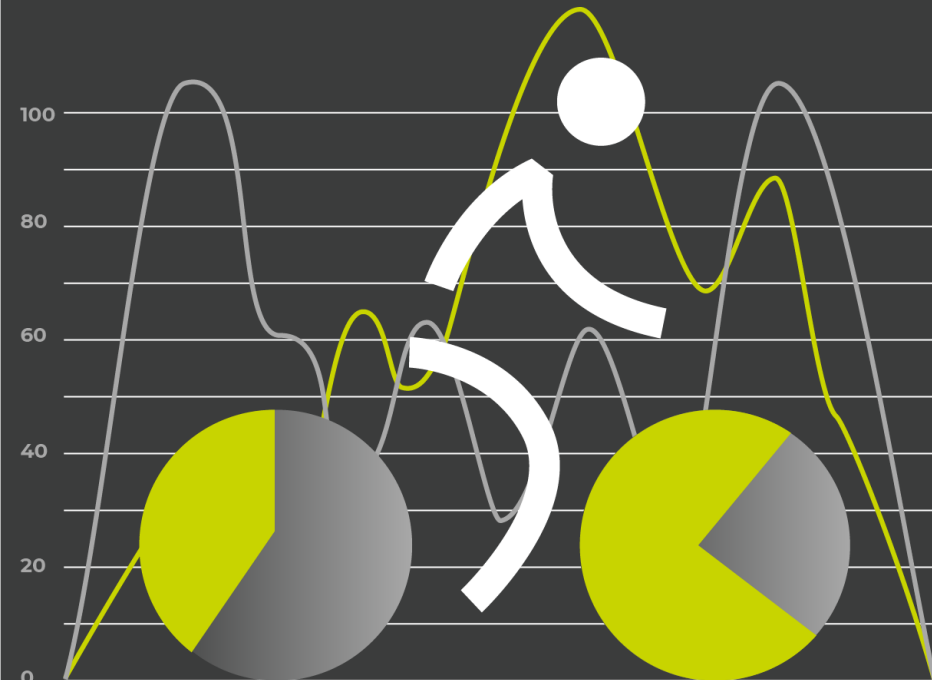
Footnote ¹³

data.bikeleague.org



BIKES COUNT:

a data competition this bike month



NEWS_{from} THE LEAGUE

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May 2, 2022

BIKES COUNT: 2022 DATA COMPETITION LAUNCHES

BICYCLE FRIENDLY AMERICA
BICYCLE FRIENDLY COMMUNITY

by Amelia Neptune

In honor of National Bike Month, we are excited to announce that the League is once again partnering with our friends at [Eco-Counter](#) to host the **Bikes Count Data Competition!** The 2022 data competition is [open for submissions](#) now through the end of June, and winners will be announced in July.

Are you looking to use **bike data to make an impact in your community**? Have you been putting off analyzing and communicating that messy Excel sheet on your desktop? Do you have some bike data that never really got used or made a splash? **Send us your data!**

Through a competitive application process, two winners will receive from Eco-Counter:

- » expert cleaning and analysis of your data from our data services team to extract key trends and insights;
- » custom branded infographics, graphs, social media cards and other communication tools with your data;
- » best-practice training on analyzing and communicating bike data;
- » ... and more!

The competition is **open to U.S.-based organizations with any kind of bike data and Bicycle Friendly America program participants.** From automated count data to GPS traces, survey data to manual counts, we want to see it! Two winners will be selected: one non-profit advocacy non-profit and one Bicycle Friendly America organization.

BIKES COUNT:

a data competition this bike month



AND THE WINNERS ARE....

BFA Participant:

Lincoln-Lancaster County Planning Department
Lincoln, NE

Advocacy Organization:

Madison Bikes (Madison, WI)

and

Bike Fitchburg (Fitchburg, WI)



Bikes count!

Data collection and analysis to support cycling

Olivia White
October 26, 2022



About Eco-Counter



Design & manufacture bike and pedestrian counters

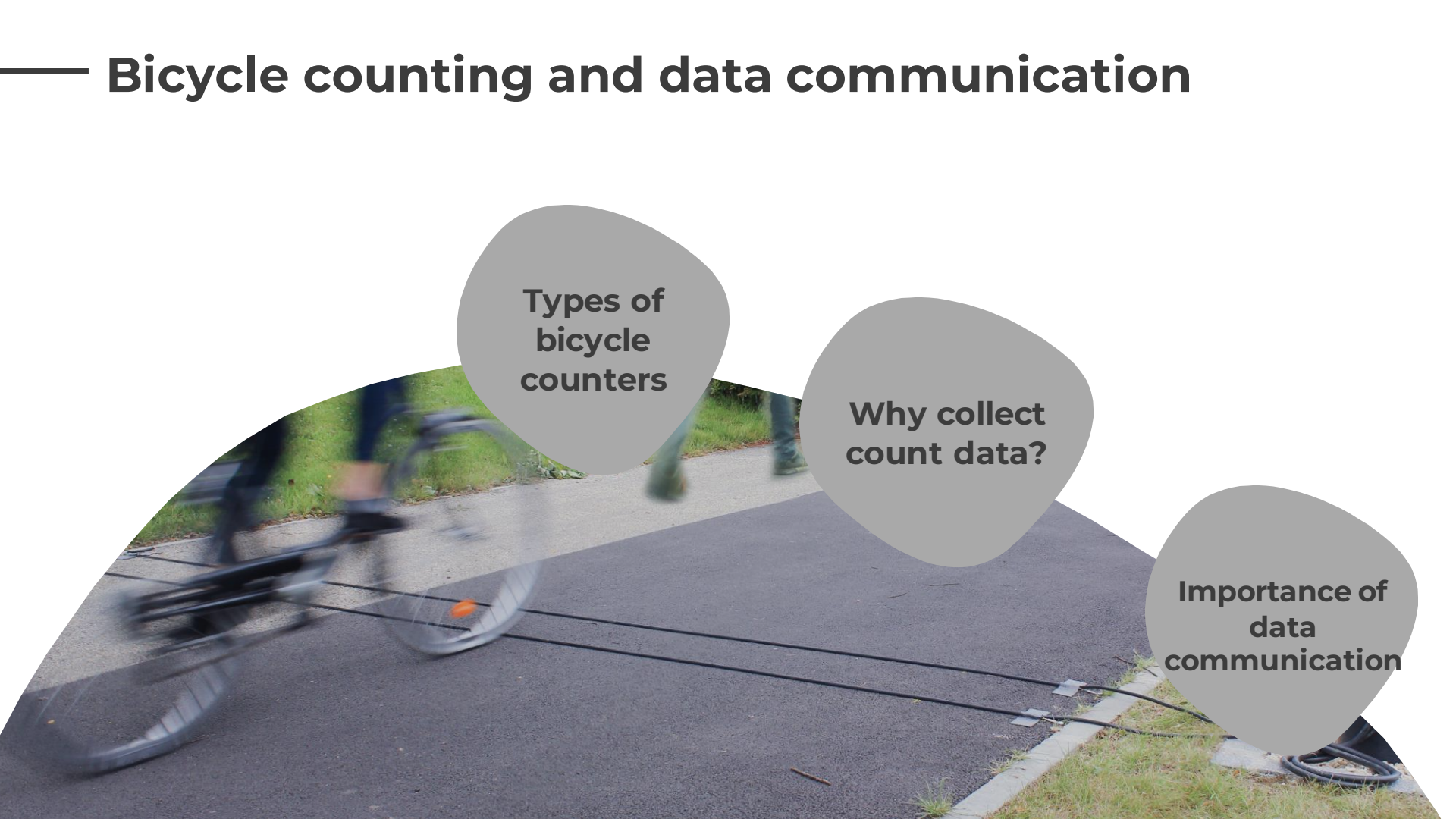


Work with organizations to develop count programs



Enable a data-driven approach to bike and pedestrian planning

— Bicycle counting and data communication

The background image shows a blurred bicycle in motion on a paved road. Several black cables are laid out across the road surface, likely for bicycle counting sensors. The scene is outdoors with grass visible on the sides.

**Types of
bicycle
counters**

**Why collect
count data?**

**Importance of
data
communication**

TUBES – Bike Counter



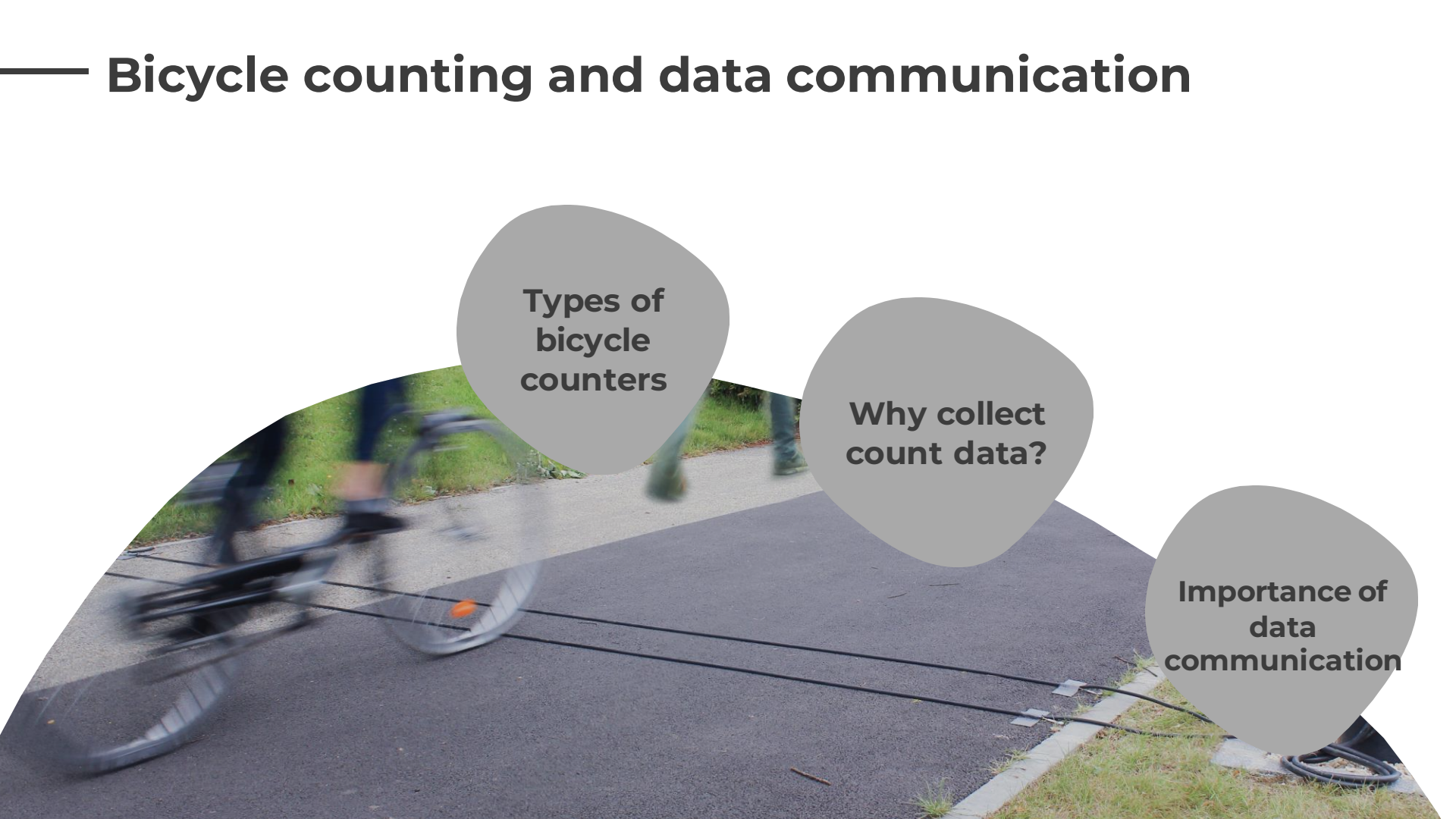
- Counts cyclists and tells direction of travel
- Pneumatic TUBES detect weight and wheel base of bicycles
- Mobile and easy to install (~30 minutes)
- Battery powered

— ZELT – Bike Counter



- Counts cyclists and tells direction of travel
- Permanent installation for on both on-street and off-street facilities
- Electromagnetic loops embedded in pavement, soil or gravel
- Battery-powered

— Bicycle counting and data communication

The background image shows a blurred bicycle in motion on a paved road. Several black cables are laid out across the road surface, likely for bicycle counting sensors. The scene is outdoors with grass visible on the sides.

**Types of
bicycle
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**Why collect
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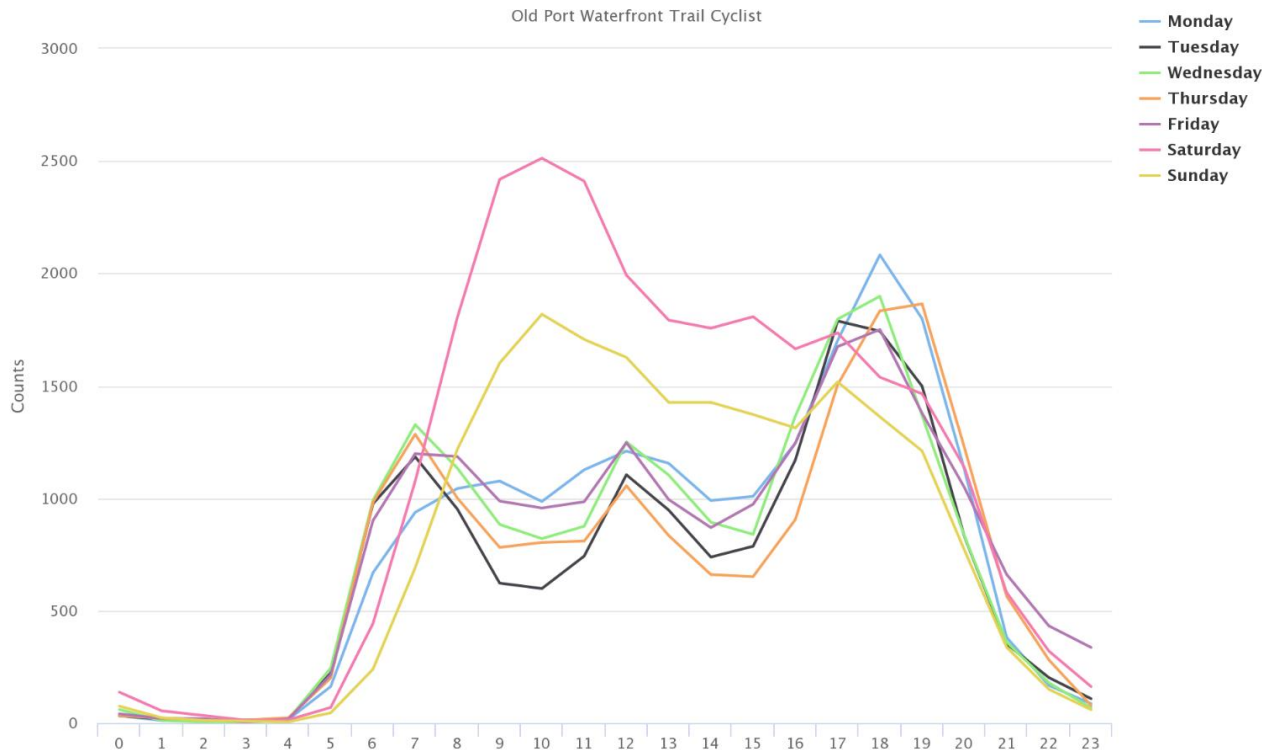
**Importance of
data
communication**

Observe patterns and trends

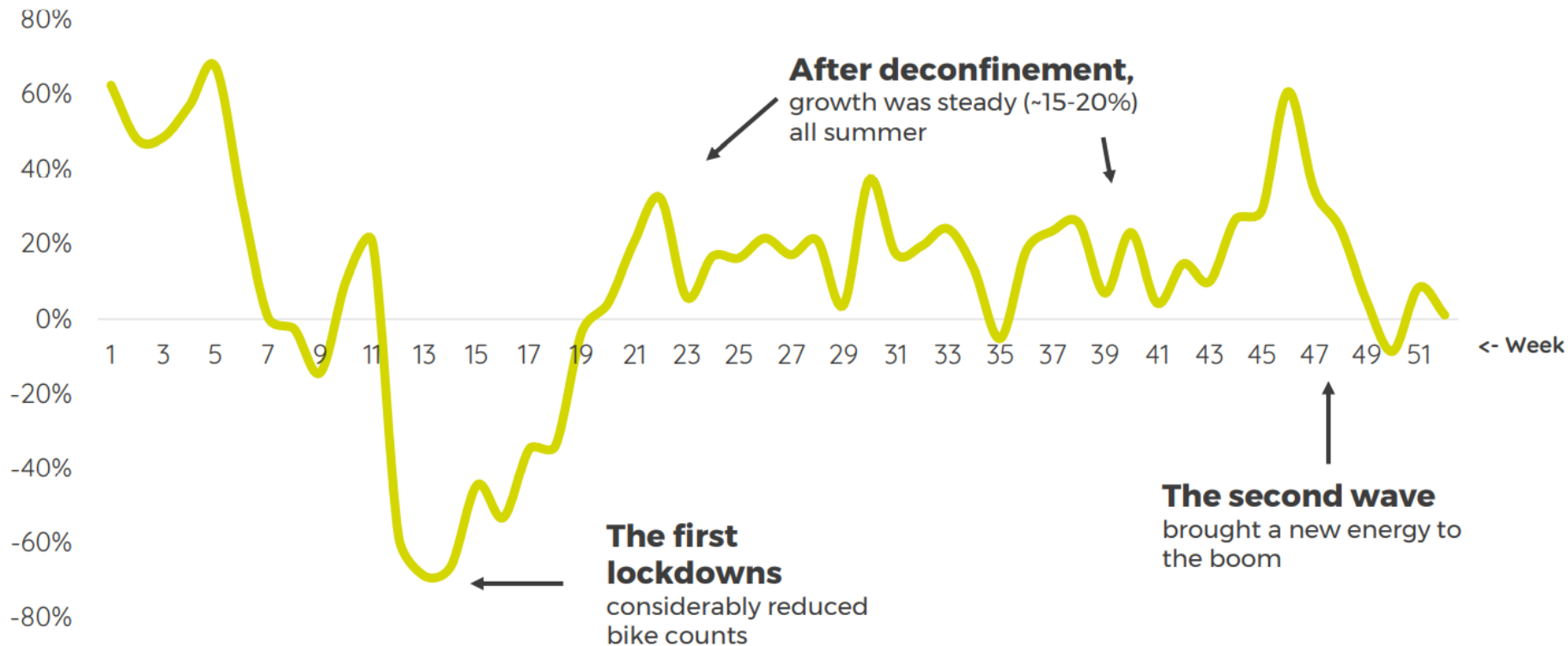
What sticks out?

- Direction of travel
- Weekend vs. weekday
- Time comparison

Weekday to weekend comparison demonstrates this trail is both a commuter and recreational facility



COVID-19 measures' impact on bike counts



Capture trends over time

2
weeks

- + **Capture** baseline trail use data
- + **Understand** hourly, daily and weekly patterns
- + **Estimate** use trends across a trail network
- + **Determine** mountain bike volumes on different trails and at different network entrance points

6
months

- + **Justify** investment in new or improved trails
- + **Capture** monthly trends and peak usage periods
- + **Adapt** maintenance practices on well-used trails
- + **Communicate** with local stakeholders, such as tourism agencies and local businesses

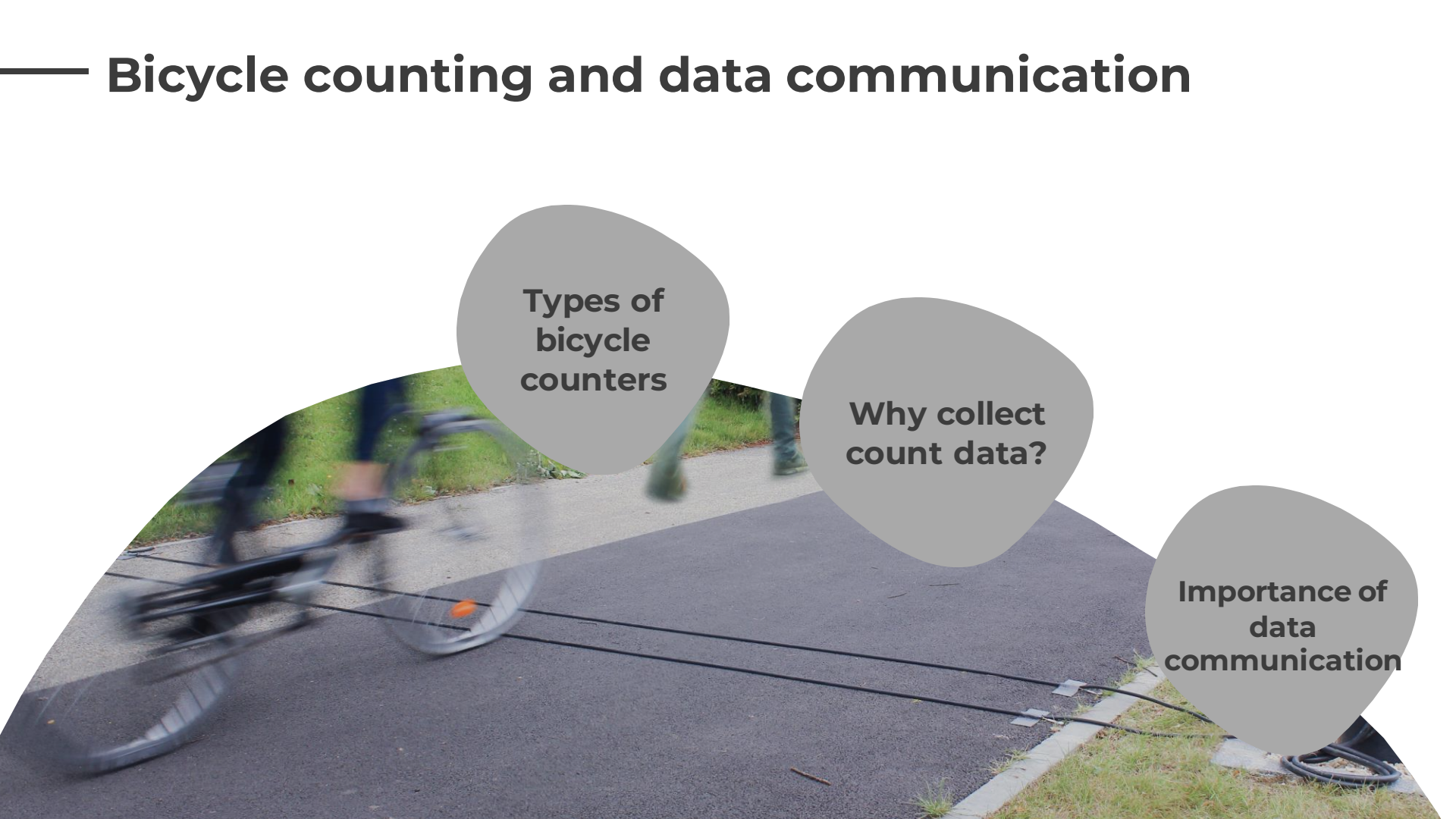
12
months

- + **Understand** seasonal trends
- + **Determine** high-traffic areas in need of expansion or improvement
- + **Inform** funding and grant applications
- + **Assess** the demand for beginner, intermediate and advanced trails

24
months

- + **Publish** long-term monitoring reports
- + **Analyze** year-on-year trends
- + **Quantify** the economic impact to local communities
- + **Justify** network expansion & long-term strategy

— Bicycle counting and data communication

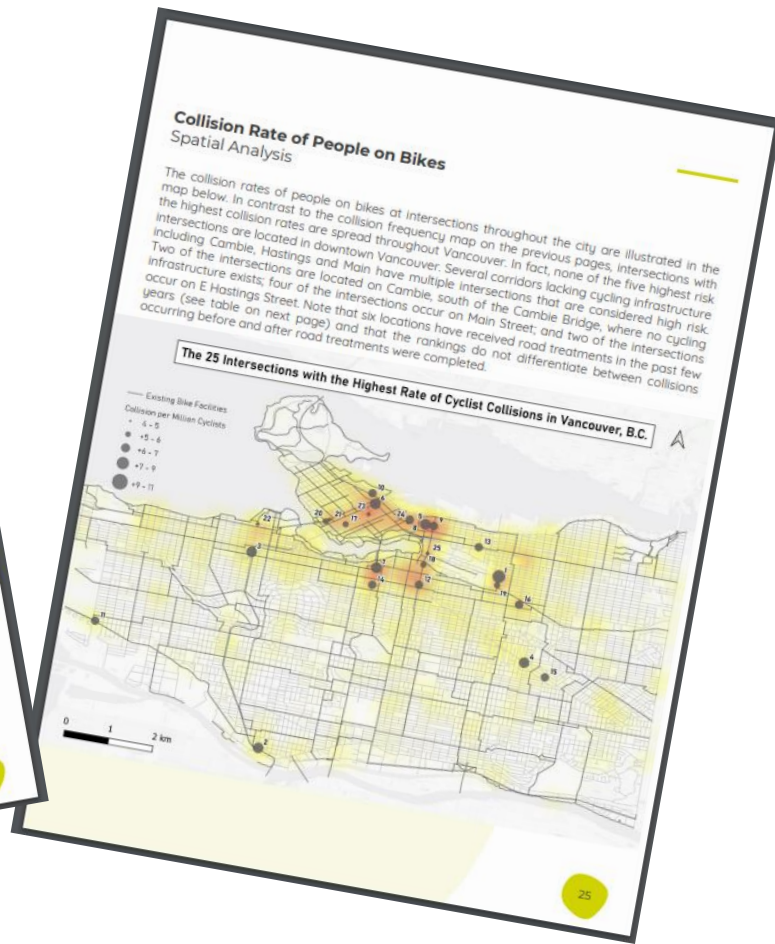
The background image shows a blurred bicycle in motion on a paved road. Several black cables are laid out across the road surface, likely for bicycle counting sensors. The scene is outdoors with grass visible on the sides.

**Types of
bicycle
counters**

**Why collect
count data?**

**Importance of
data
communication**

Custom studies with count data



Data reconstruction

Data gaps can happen...

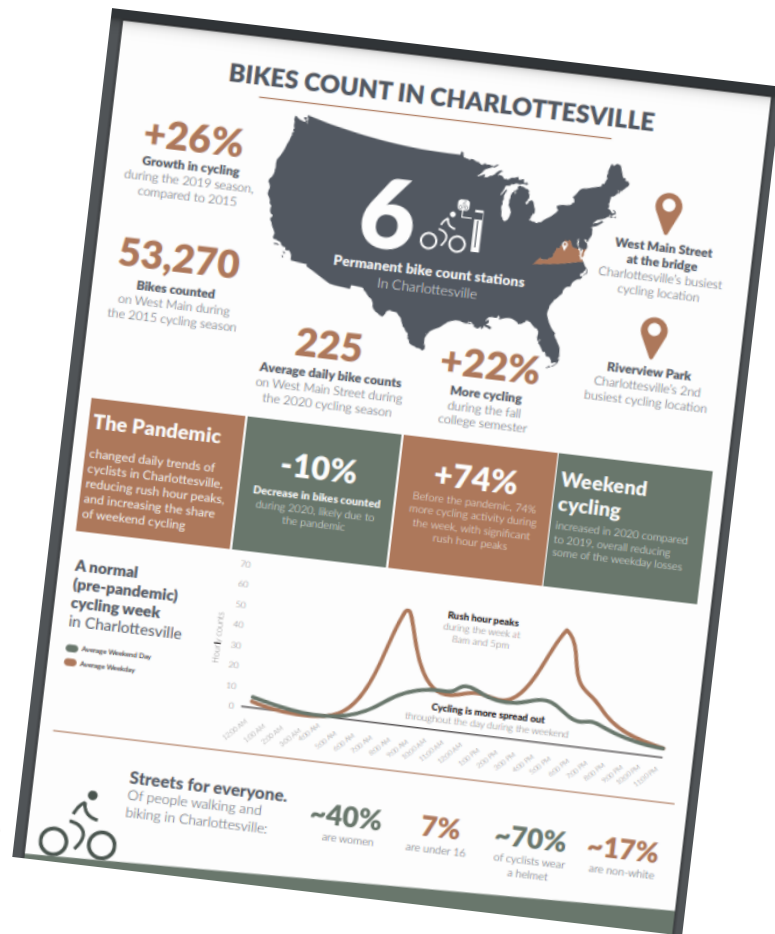
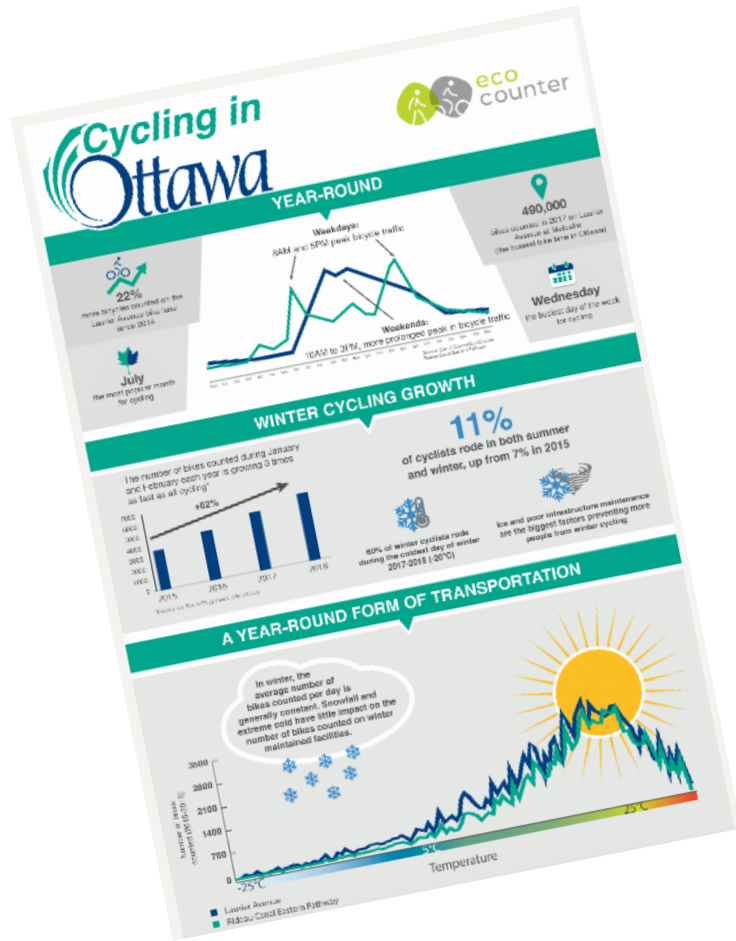
- Explain unusually high or low counts – was there an event?
- Omit or reconstruct incorrect data

Eco-Counter tools

- Eco-Visio auto-reconstruction tool
- Eco-Counter Data Services team



Cycling data infographics



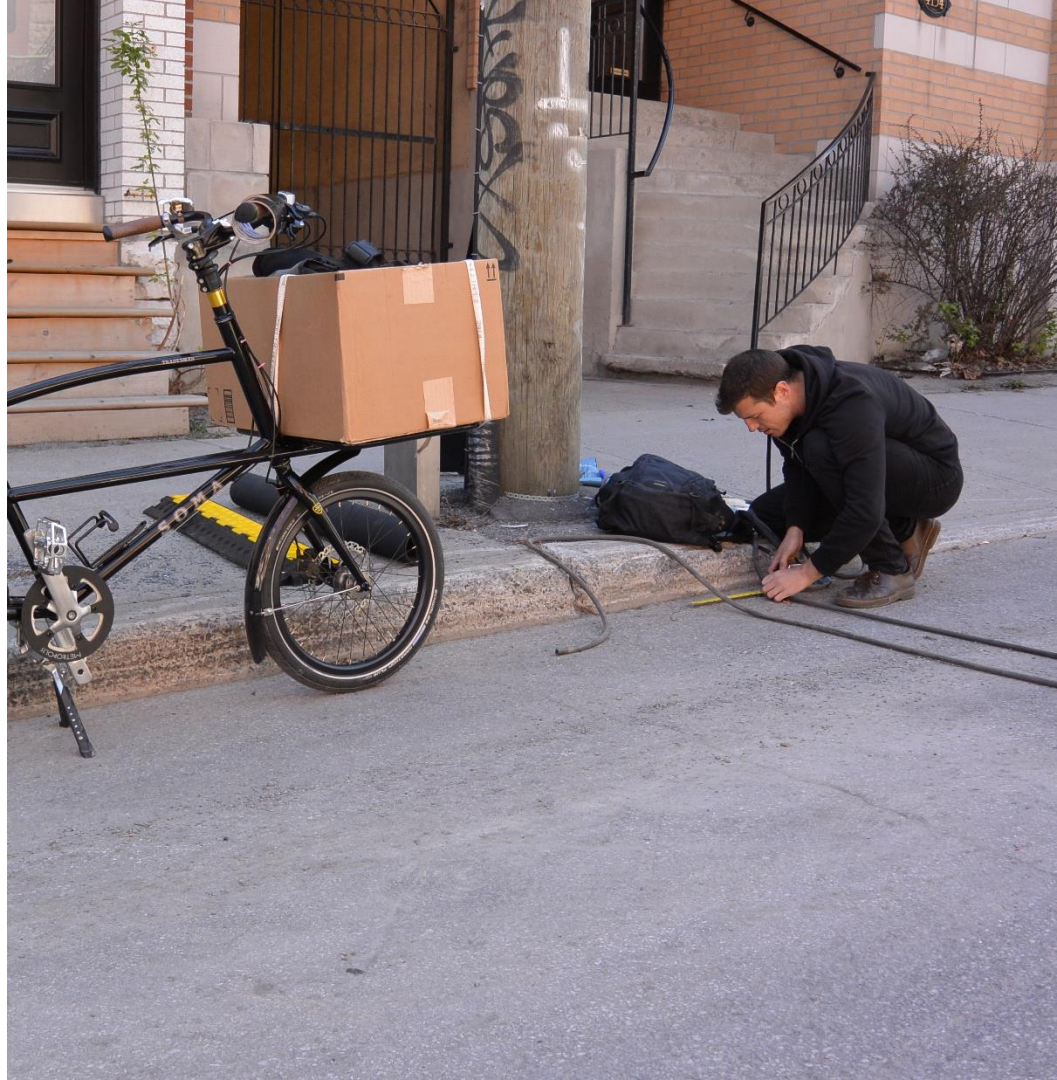
Share

Share your counting expertise!

- Documenting your process and sharing with others helps to establish best practices
- Transparency and credibility

Share your findings!

- Engages community
- Demonstrates the value of active transportation facilities
- Justifies investments



Thank you

Olivia White

owh@eco-counter.com





Bikes Count

Bike count data analysis, trends and key takeaways for the City of Lincoln, Nebraska

October 2022

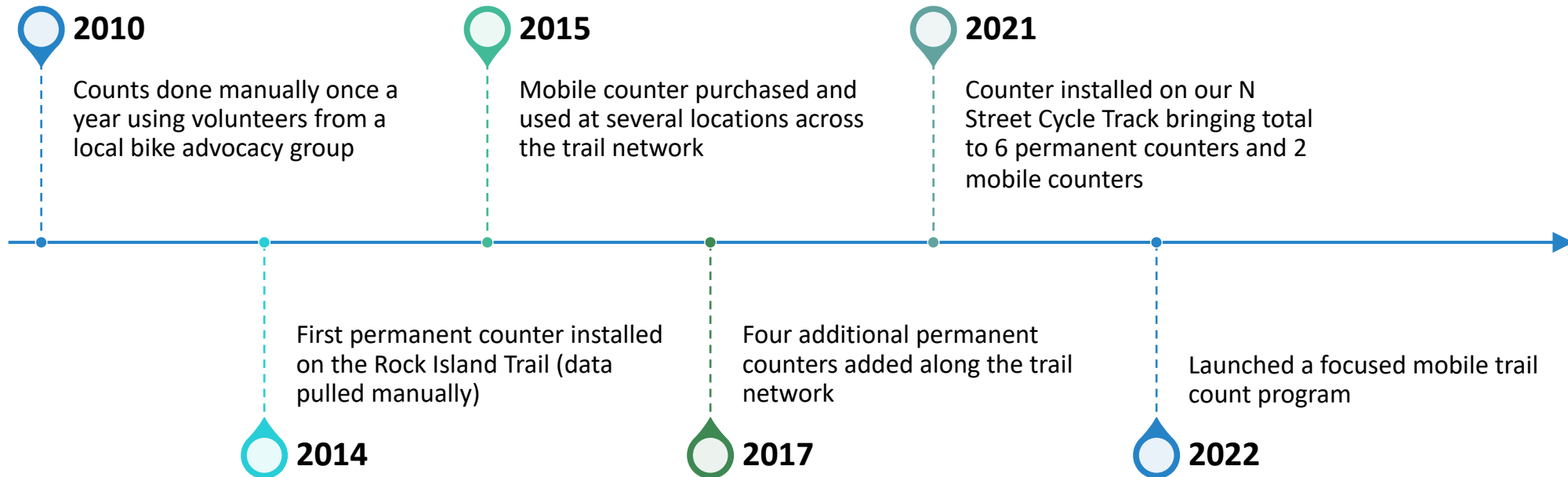


Lincoln's Biking Highlights

- 2014 Great Places in America Award for Trails Network
- 2016 Bike Share Launched
- 2018 On-Street Bike Plan
- 2019 Silver Bicycle Friendly Community



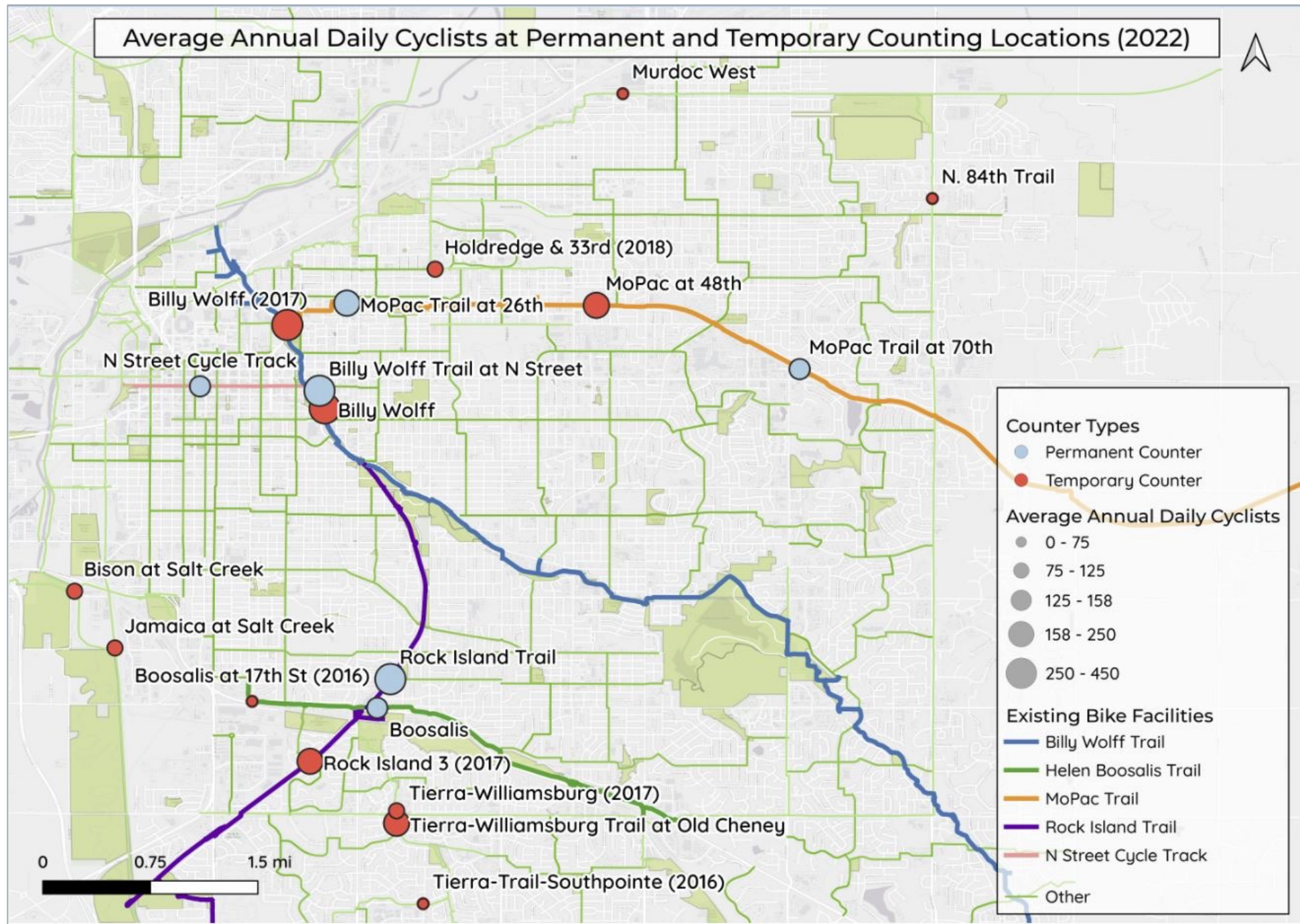
History of Counts



Permanent and Temporary Bike Counting Locations in Lincoln



Average Annual Daily Cyclists at Permanent and Temporary Counting Locations (2022)



Lincoln's busiest cycling locations 2022



Rock Island Trail



Billy Wolff Trail at N Street



MoPac Trail at 26th



MoPac Trail at 48th



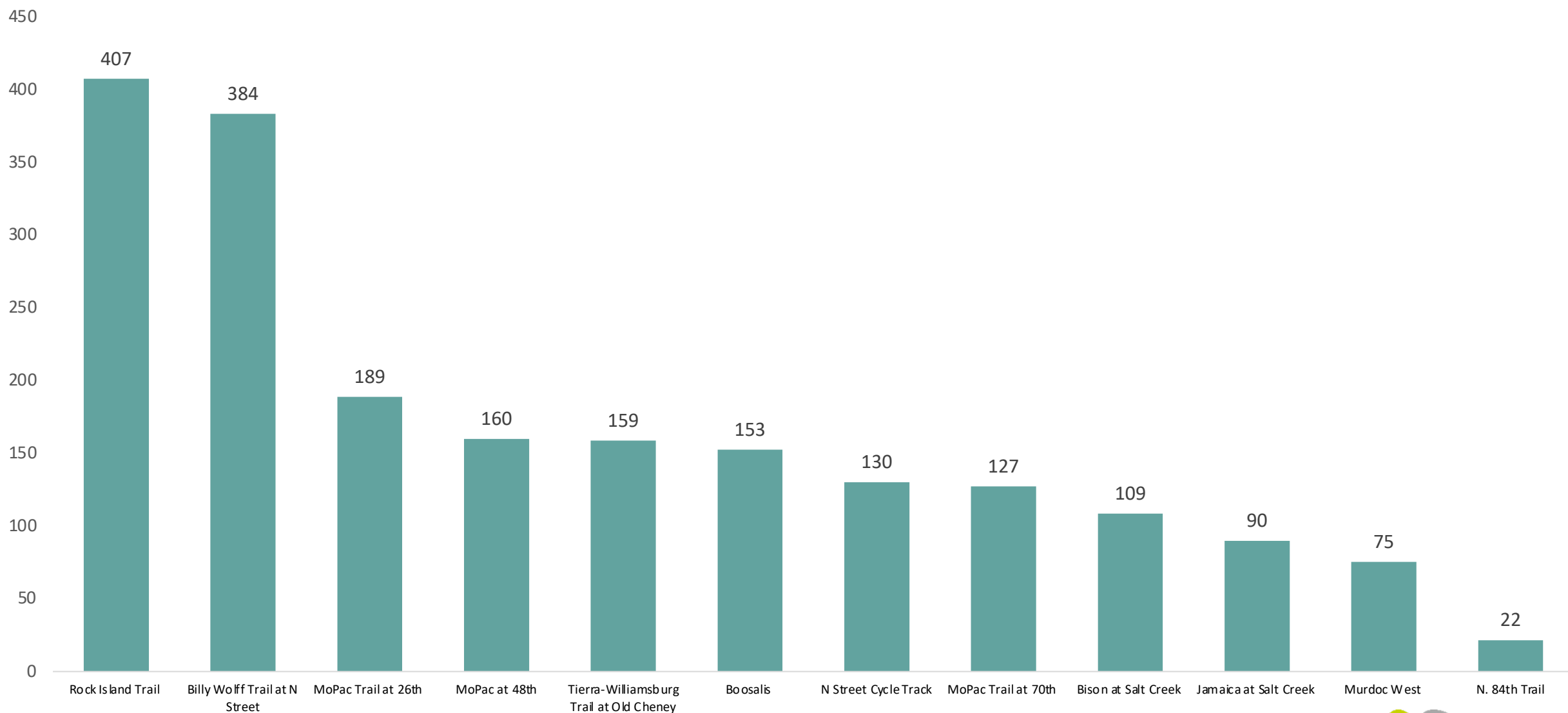
Tierra-Williamsburg Trail
at Old Cheney



Photo Source: Billy Wolff Trail, Stephanie Rouse (City of Lincoln)

Based on average annual daily cyclist estimate

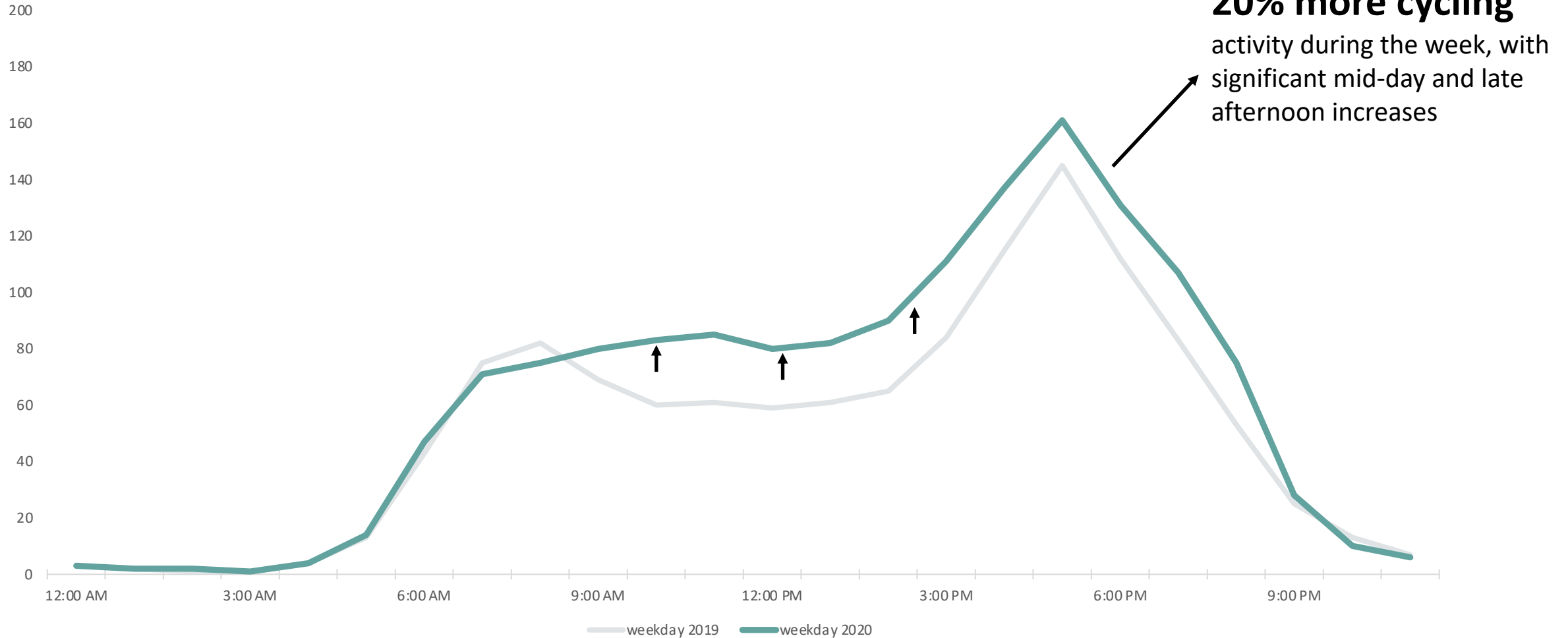
Average annual daily cyclists (2022)



Based on average annual daily cyclist estimate at permanent and temporary count locations

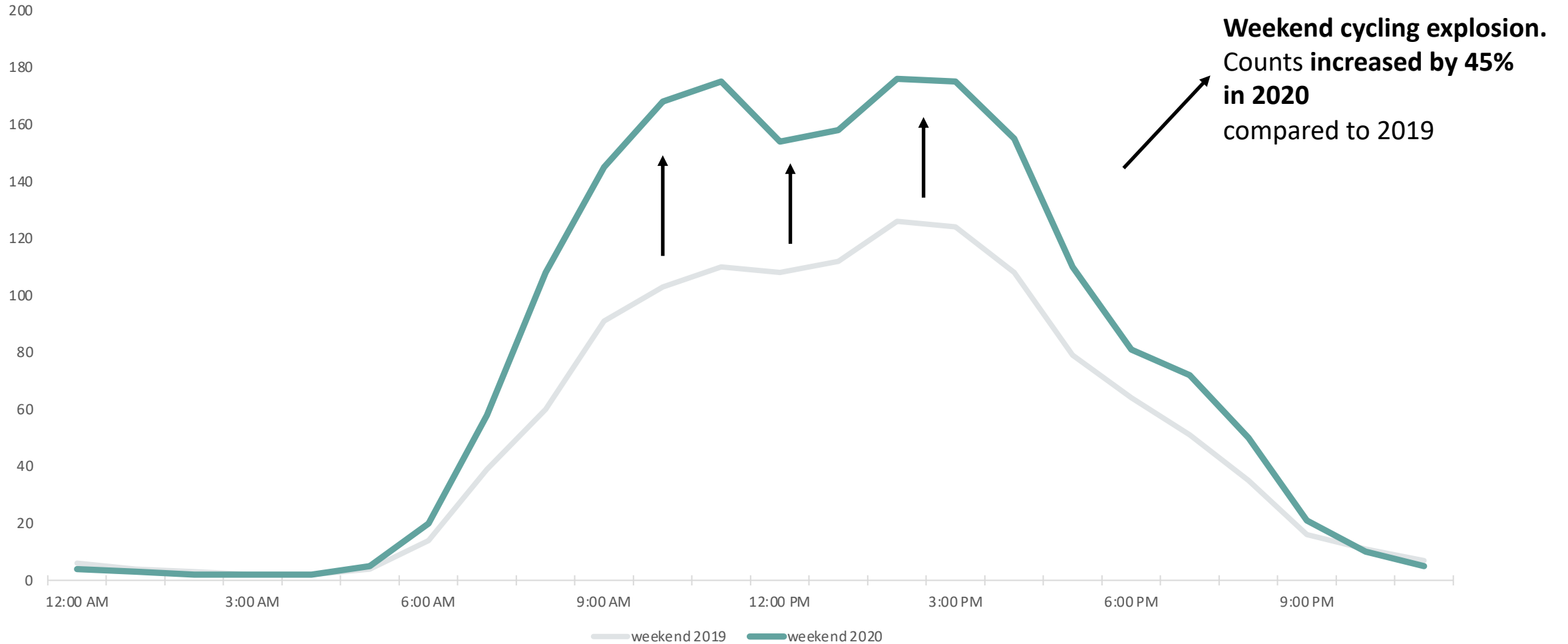
Impact of the pandemic: weekday hourly profile – five permanent sites

hourly counts

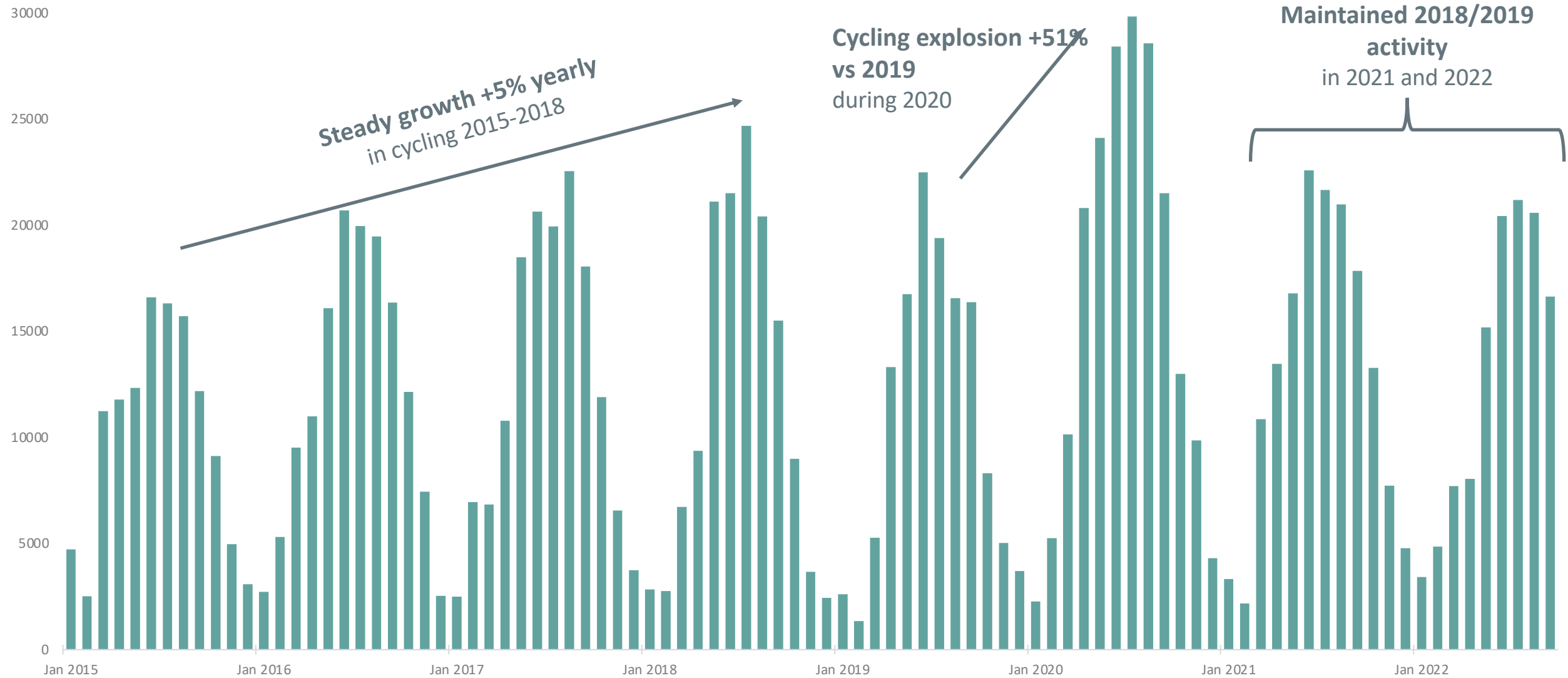


Impact of the pandemic: weekend hourly profile – five permanent sites

hourly counts



Cycling over the years: 2015-2022 Rock Island Trail monthly counts



Rock Island– cycling over the years

120,500

**Bikes counted
during 2015**

198,000

**Bikes counted
during 2020**

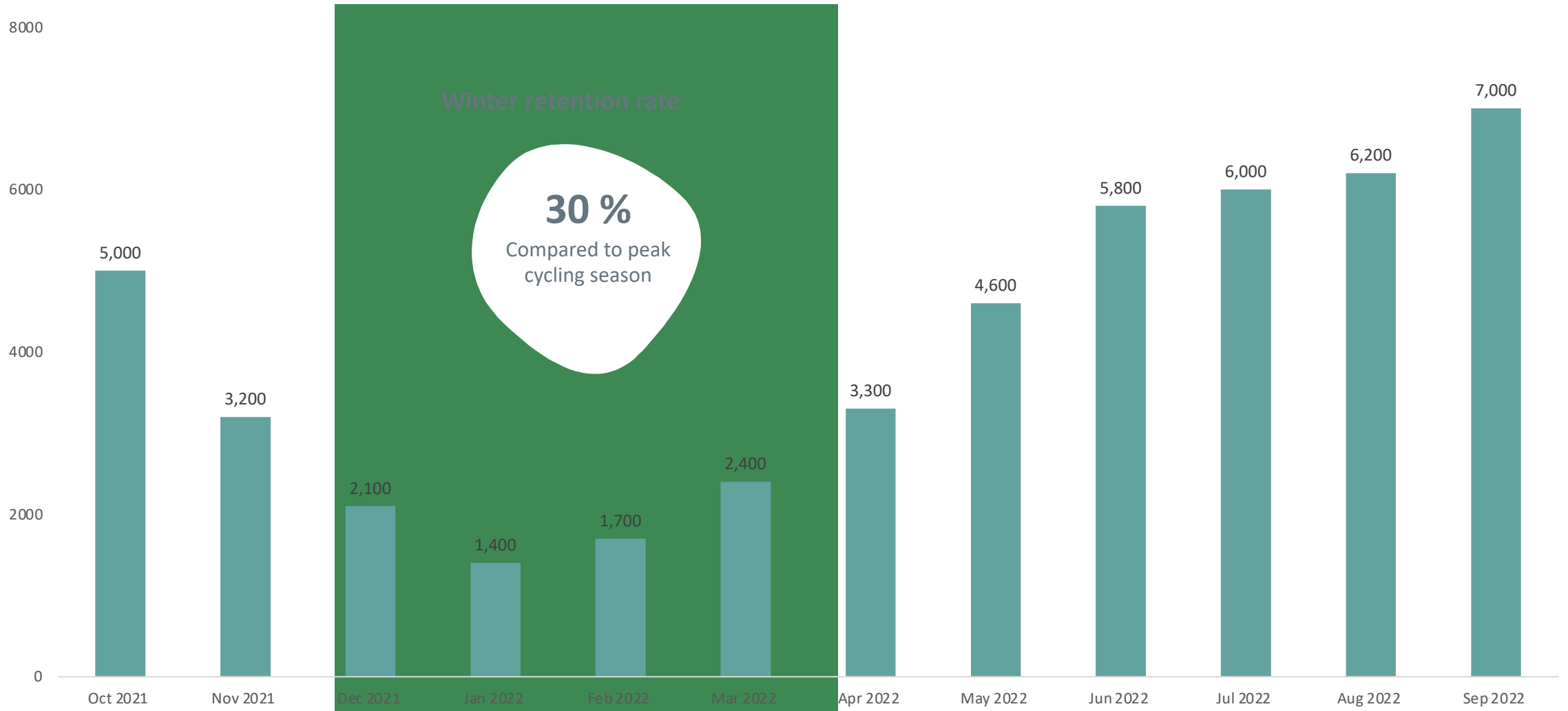
+70%

**Growth in cycling
during weekend
2020, compared to
2015**

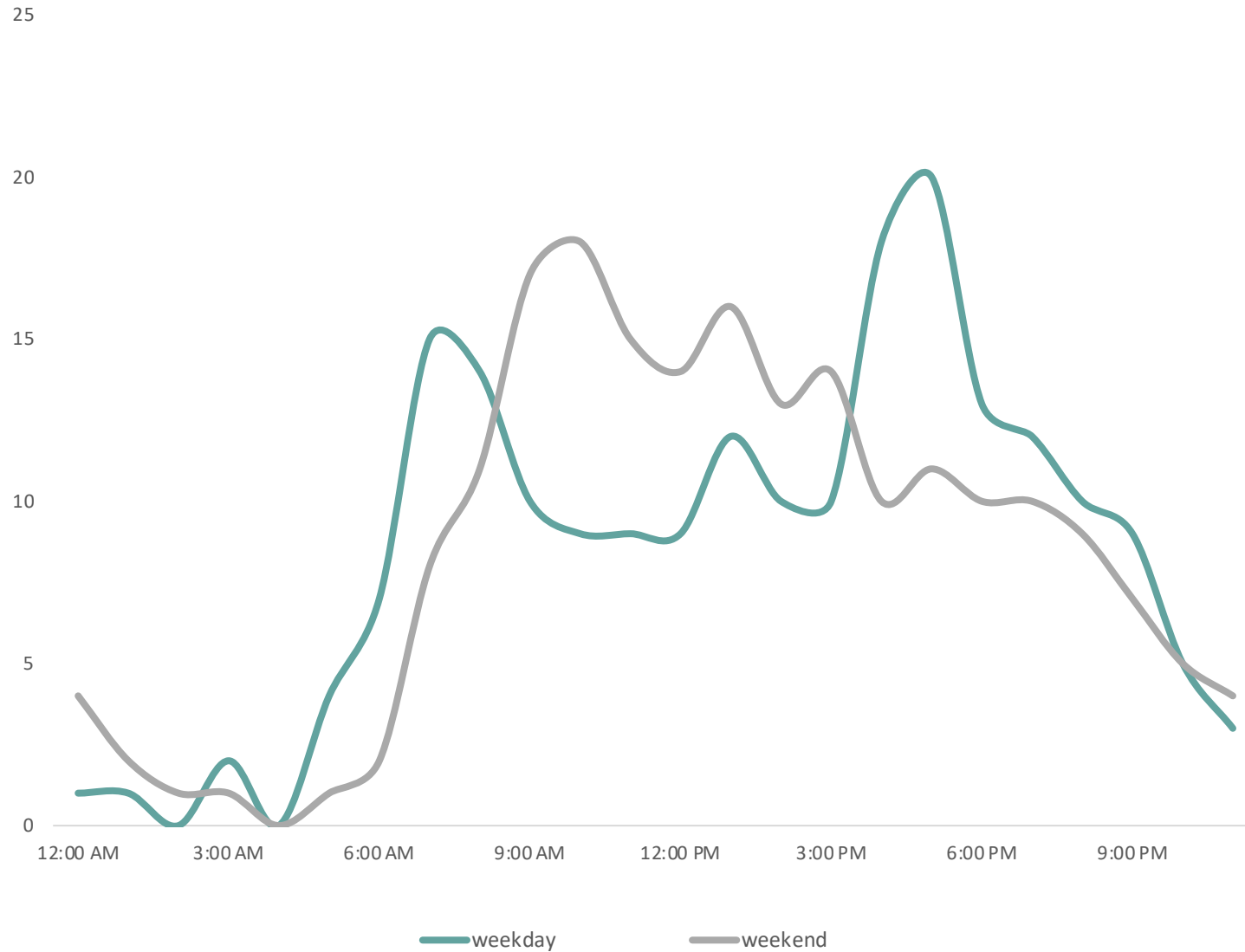
+61%

**Growth in cycling
during weekdays
2020, compared to
2015**

Monthly evolution at N Street Cycle Track



Average hourly counts at N Street Cycle Track



Average weekday and weekend hourly counts between Oct. 1st, 2021 and Sep. 30th, 2022



Photo Source: N Street Cycle Track, Alta Design + Planning

Key takeaways

Rock Island Trail and **Billy Wolff Trail** are heavily used routes within Lincoln's existing cycling network

Between 2015-2018, cycling activity at **Rock Island Trail** grew steadily, increasing by 5% annually

Permanent count data revealed that Lincoln's trail network experienced **overall growth on both weekdays and weekends in 2020**

Introducing **short-term counts** allows for a more **robust understanding** of cycling activity throughout a city or region

Bikes Count in Lincoln

Number of cyclists counted during the last 12 months*

145,000



Rock Island Trail

139,000



Billy Wolff Trail at N Street

68,000



MoPac Trail at 26th

54,000



Boosalis

49,000



N Street Cycle Track

45,000



MoPac Trail at 70th

*Oct. 1st, 2021 - Sep. 30th, 2022

Impact of the pandemic

+ 28%

increase in overall bike counts in 2020 compared to 2019



+ 45%

increase in weekend bike counts in 2020 compared to 2019

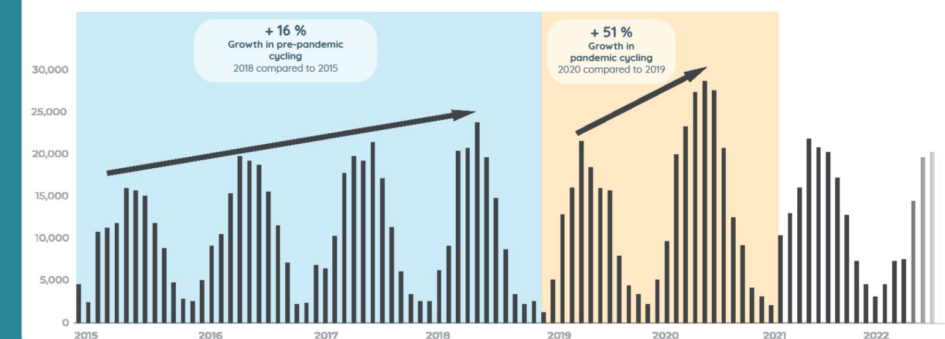


+ 3%

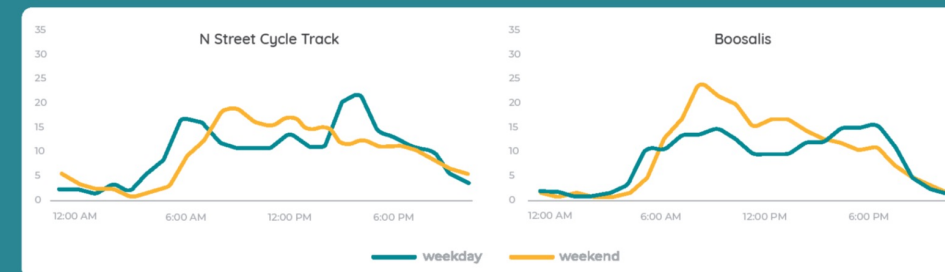
increase in overall bike counts in 2021 compared to 2019



Monthly bike counts at Rock Island Trail



Average hourly bike counts during summer 2022*



*June 21st - Sep. 22nd, 2022

What's Next



Mobile count program will rotate a total of 27 locations with sites counted every two years



Reporting the data on an interactive website for all counters, updating permanent locations monthly

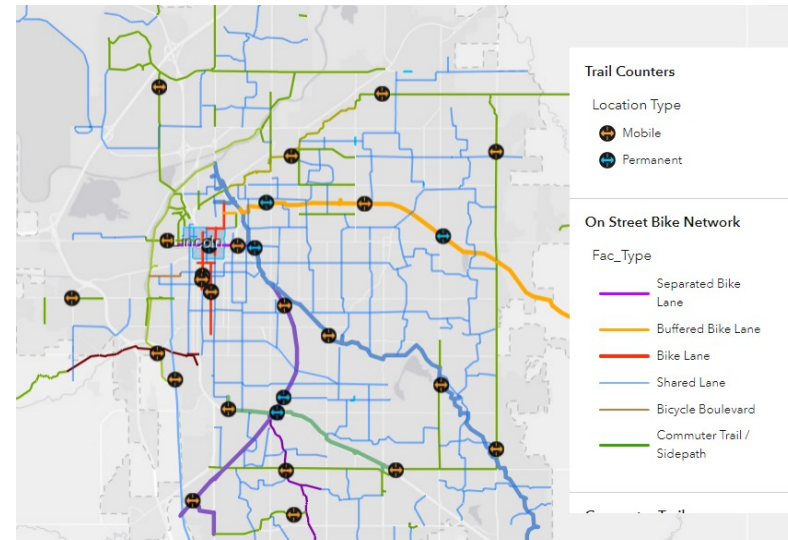


Determining what else we can use this data for beyond supporting grant applications

Interactive Website

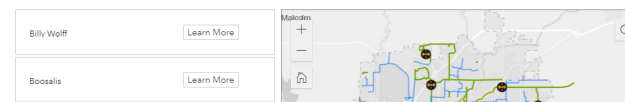
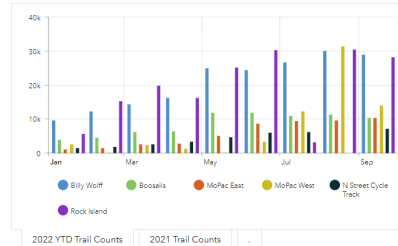
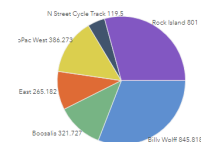
<https://www.lincoln.ne.gov/City/Departments/Planning-Department/MPO/Bike-Lincoln/Bicycle-and-Pedestrian-Counts>

Or go to bike.lincoln.ne.gov and click on the Trail Counts icon



Permanent Trail Counters

2021 Daily Average Users



Billy Wolff (Permanent)

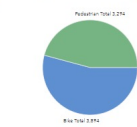


MoPac at 48th (Mobile)

Based on the data collected during the first week count and annual trends from the permanent counters, the following estimates were developed for this location on an annual basis.

350 Annual Average Daily Users
127,769 Annual Total Users

Bicycle-Pedestrian Split



Data from the most recent short duration count except for the Boosalis location which is an average from two counts in spring 2022.

Trail Counts

Location Name	Start Date	End Date	Pedestrian Total	Bike Total
MoPac at 48th	4/17/2022 7:00 PM	5/31/2022 7:00 PM	3,294	3,894

Bike Lane Design

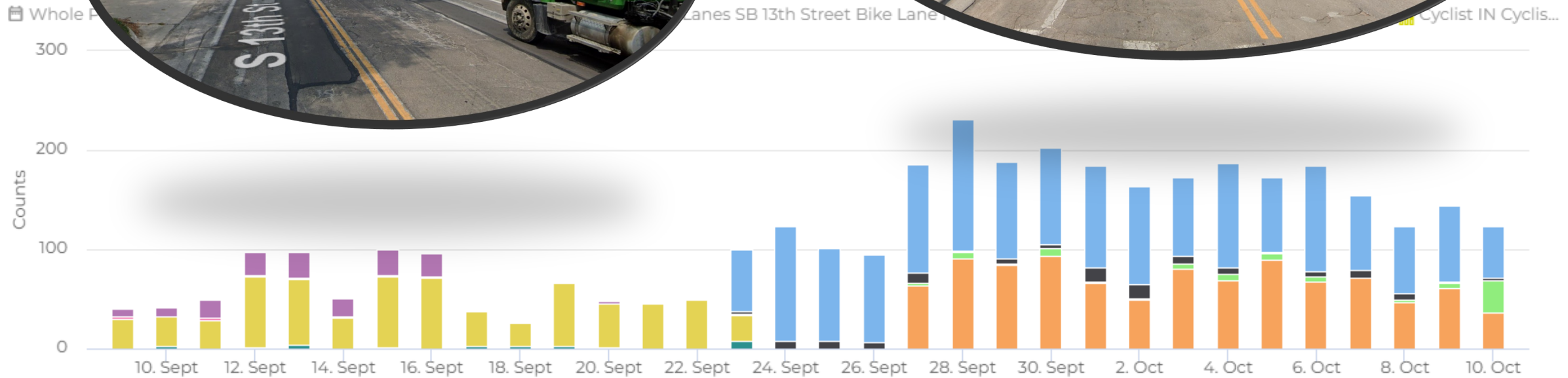




Photo Source: Lincoln Mall Bike Lanes, Stephanie Rouse (City of Lincoln)

Bikes Count:

A competition with Eco-Counter
and the League of American
Bicyclists

October 2022





Make it count in Madison and Fitchburg

Bike count data analysis, trends
and key takeaways for Madison Bikes and Bike
Fitchburg

October 2022

Photo Source: @cyclists_of_msn (Twitter)

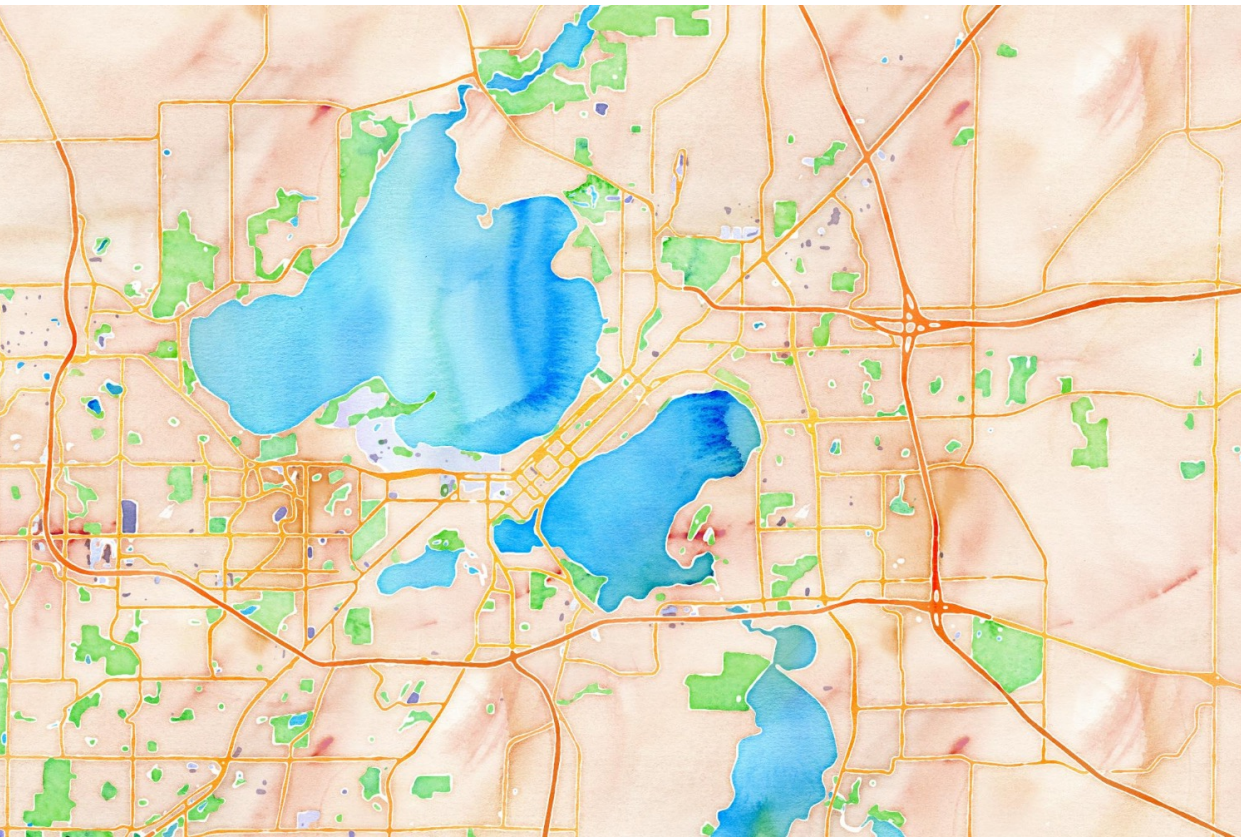


Who we are

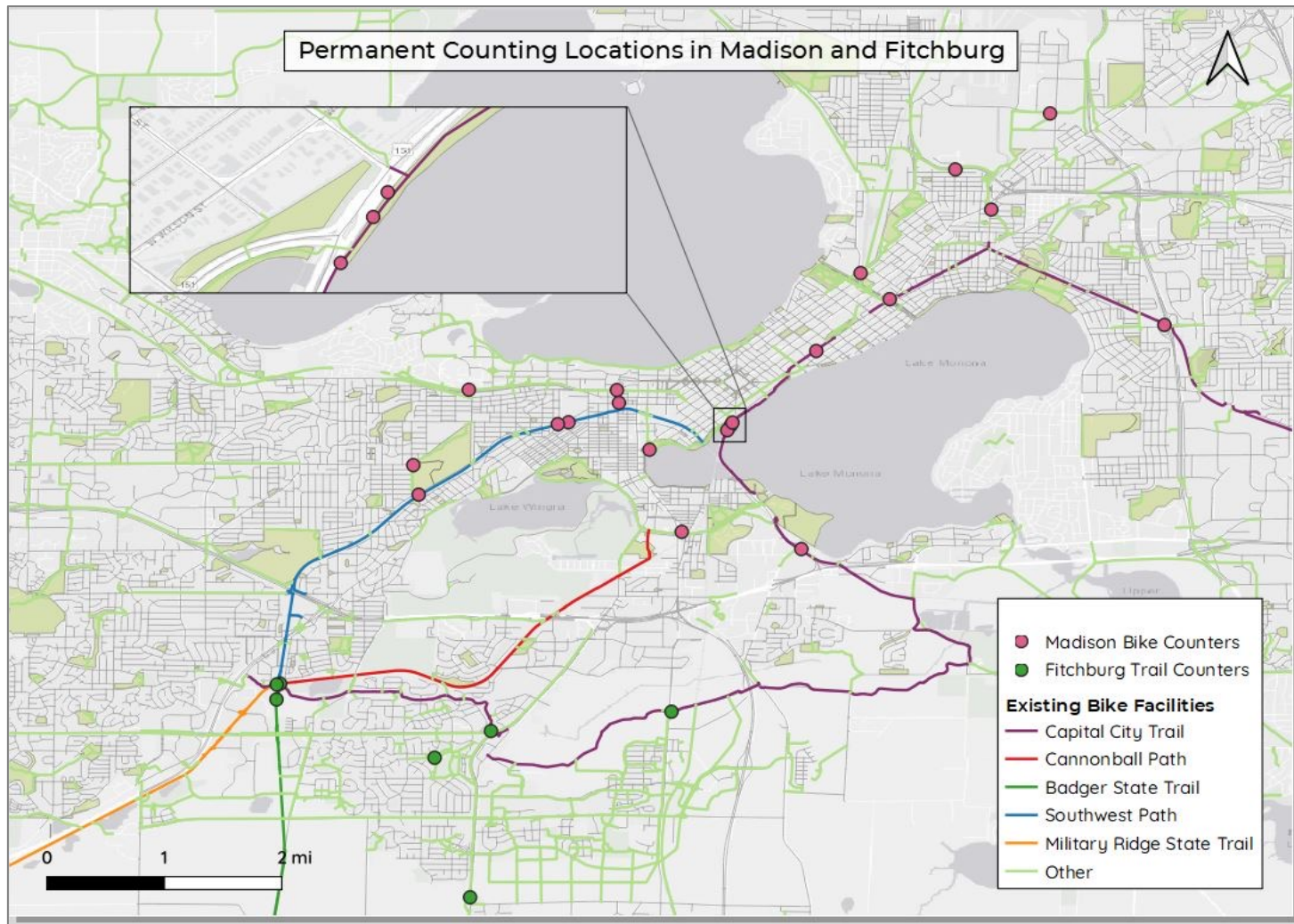
Madison Bikes envisions a city where anyone can ride a bicycle conveniently and comfortably to any place in the city and neighboring communities year round.



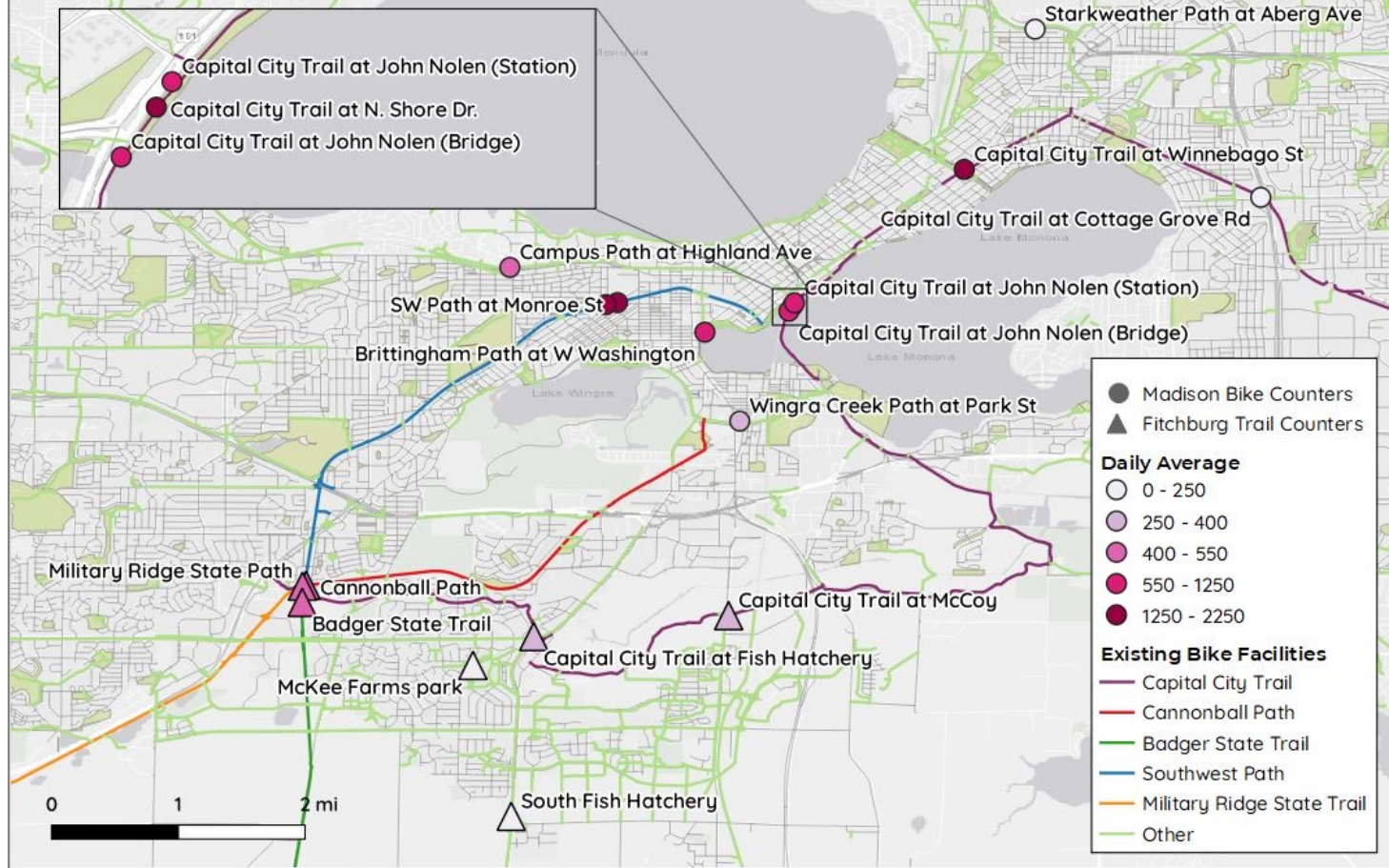
Where we are



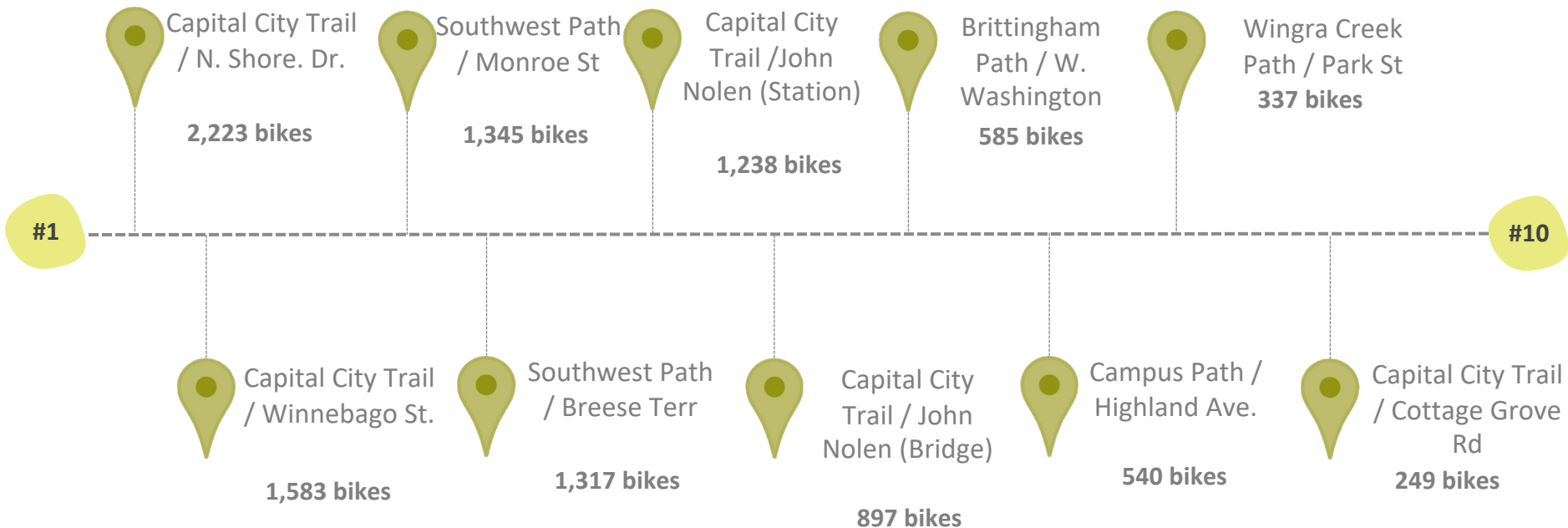
Permanent Counting Locations in Madison and Fitchburg



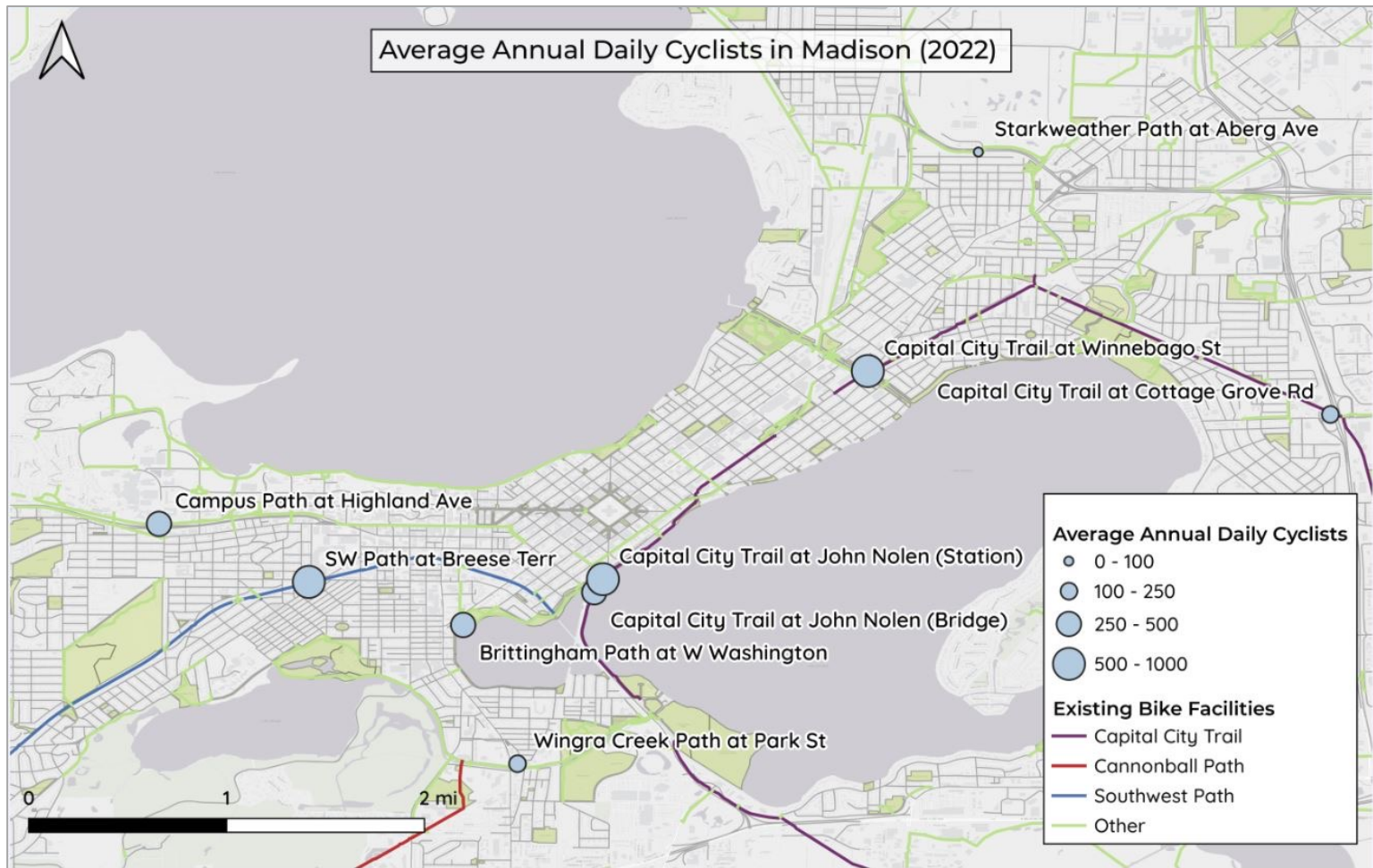
Average Daily Cyclists in Madison and Average Daily Trail Users in Fitchburg (June 2022)



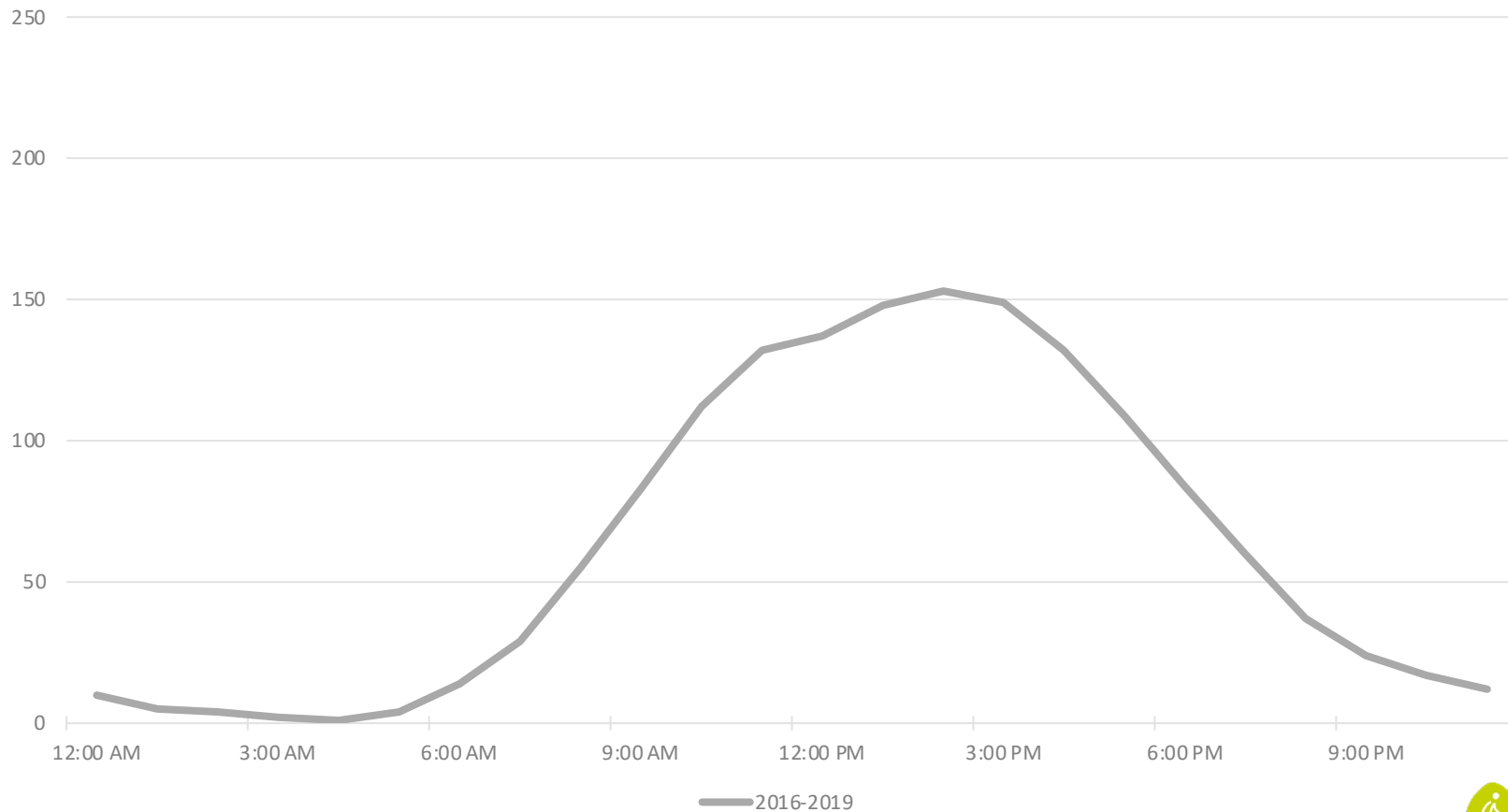
Cycling in Madison : top 10 locations with the highest average bike counts in June 2022



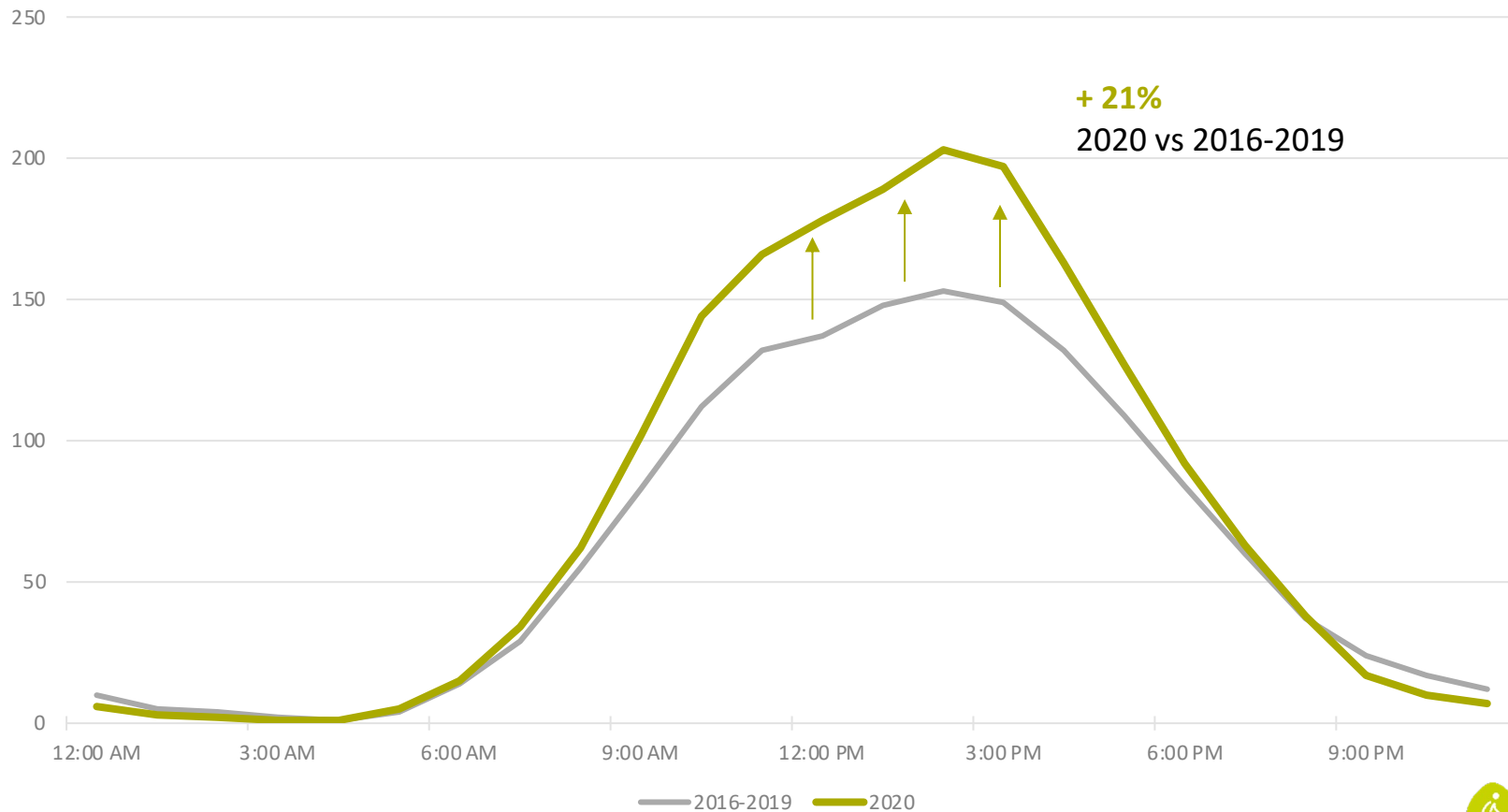
Calculated based on average daily traffic (ADT) for June 2022



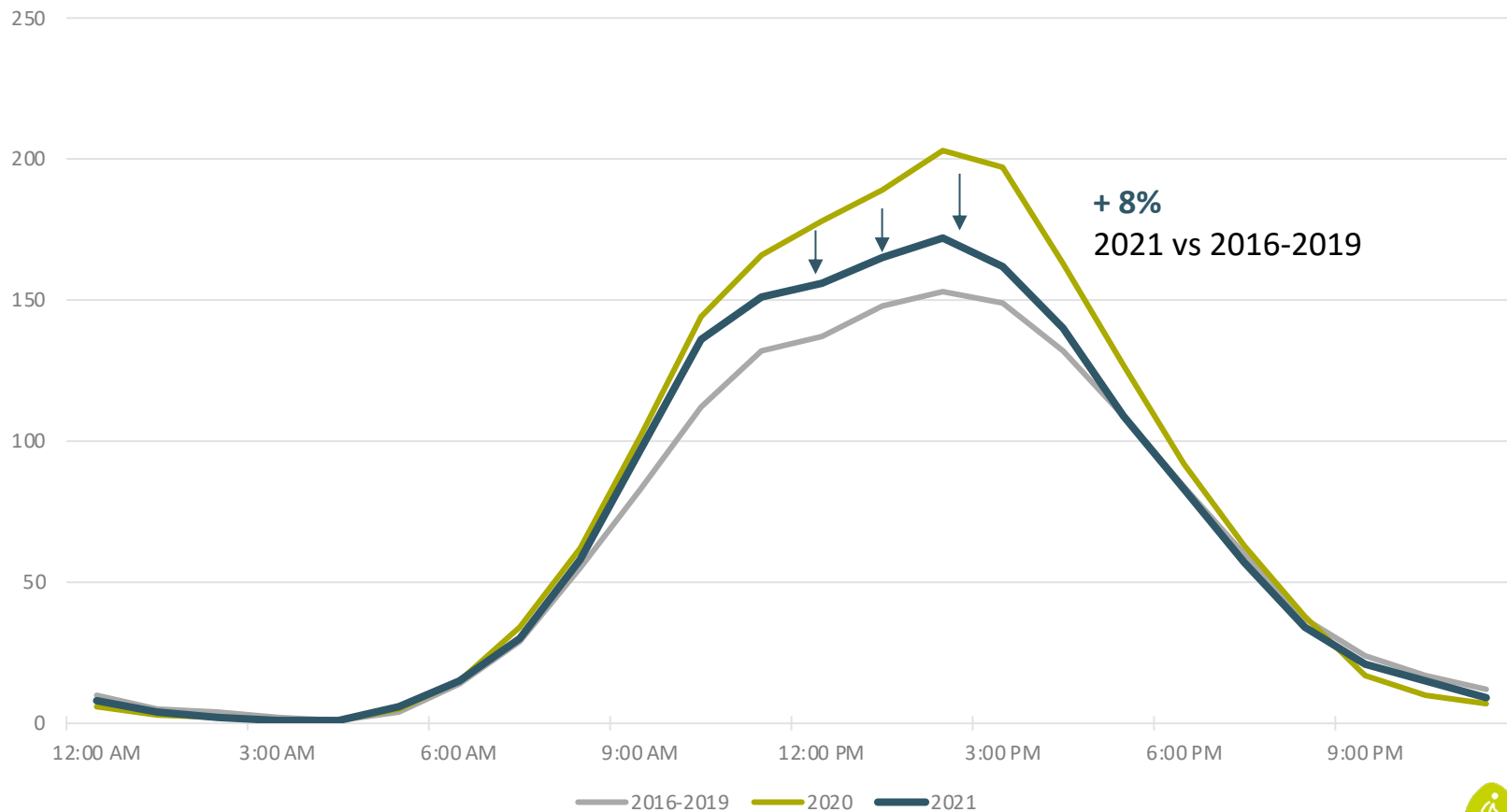
Impact of the Pandemic: weekend bike traffic in Madison



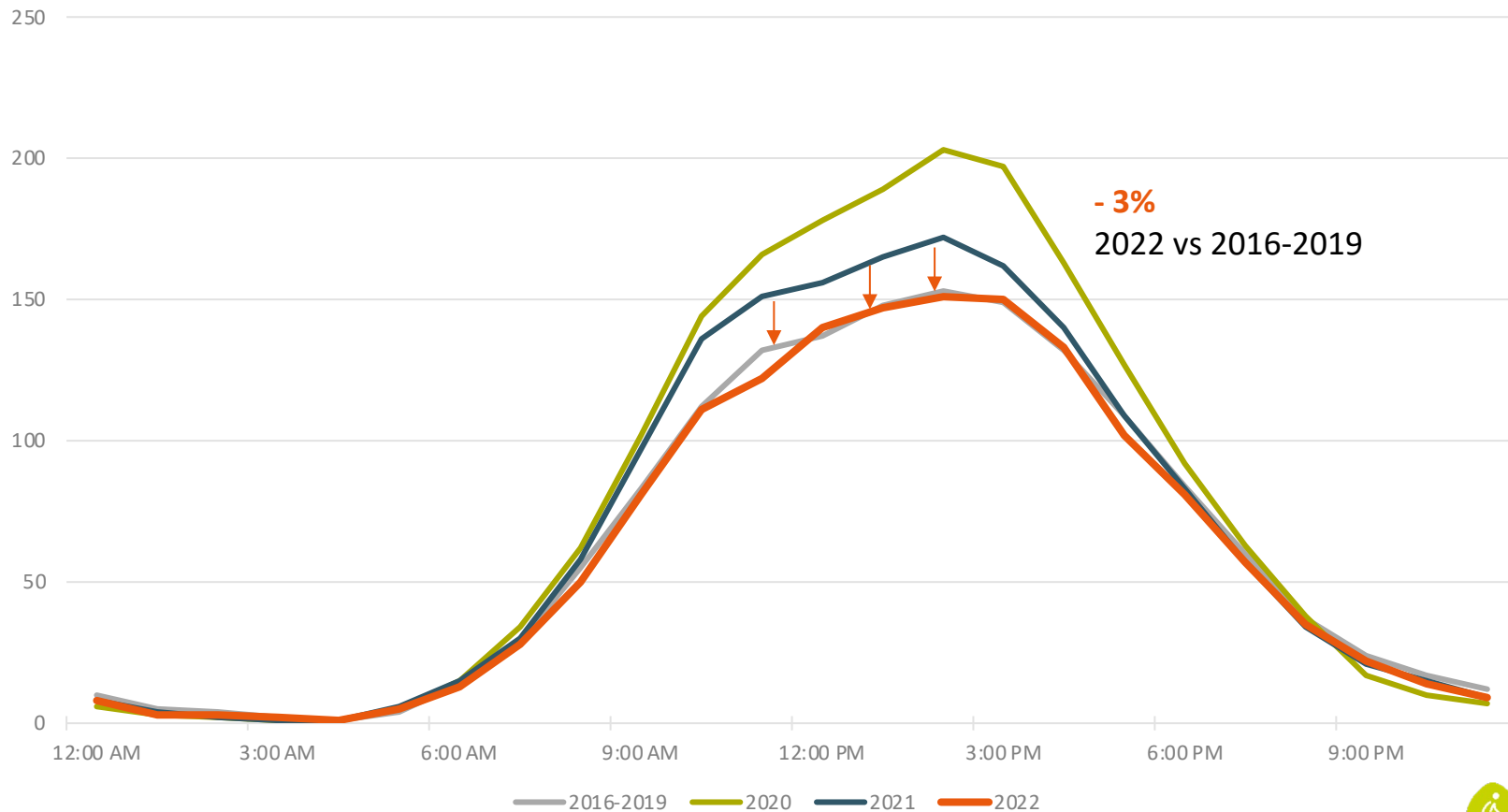
Impact of the Pandemic: weekend bike traffic in Madison



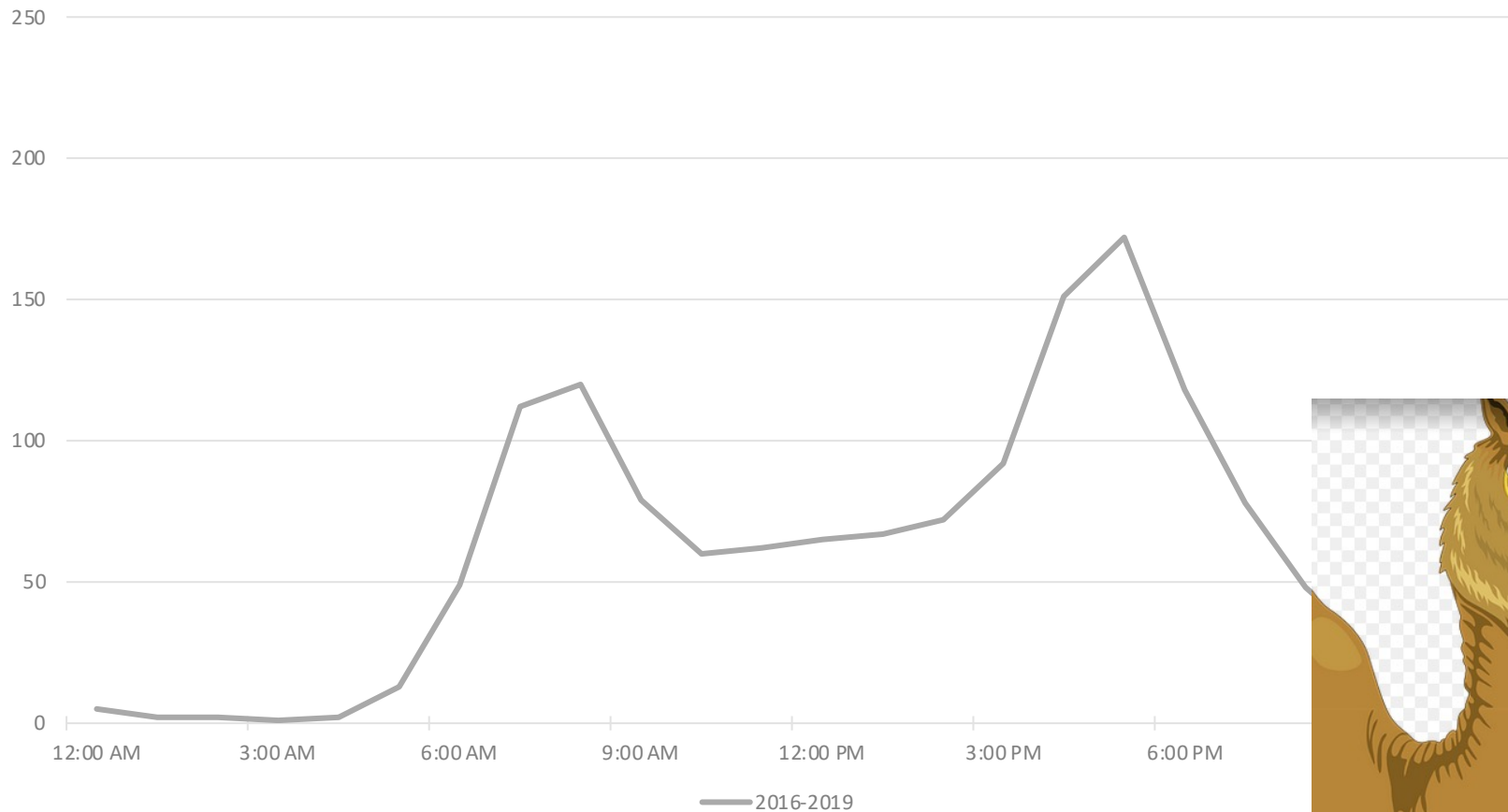
Impact of the Pandemic: weekend bike traffic in Madison



Impact of the Pandemic: weekend bike traffic in Madison

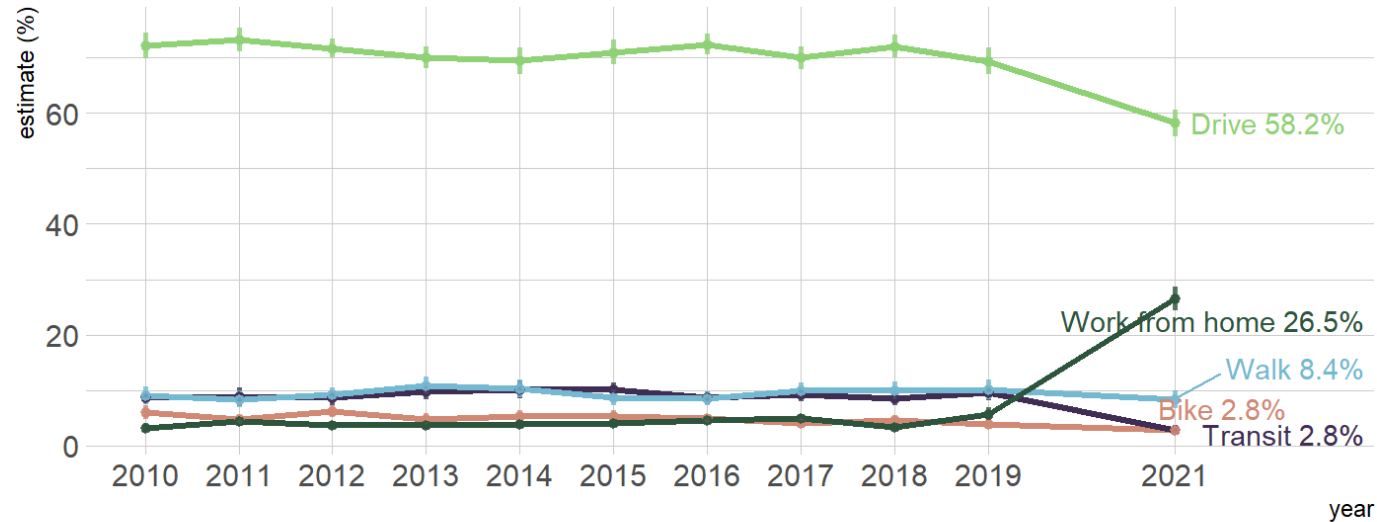


Impact of the Pandemic: weekday bike traffic in Madison



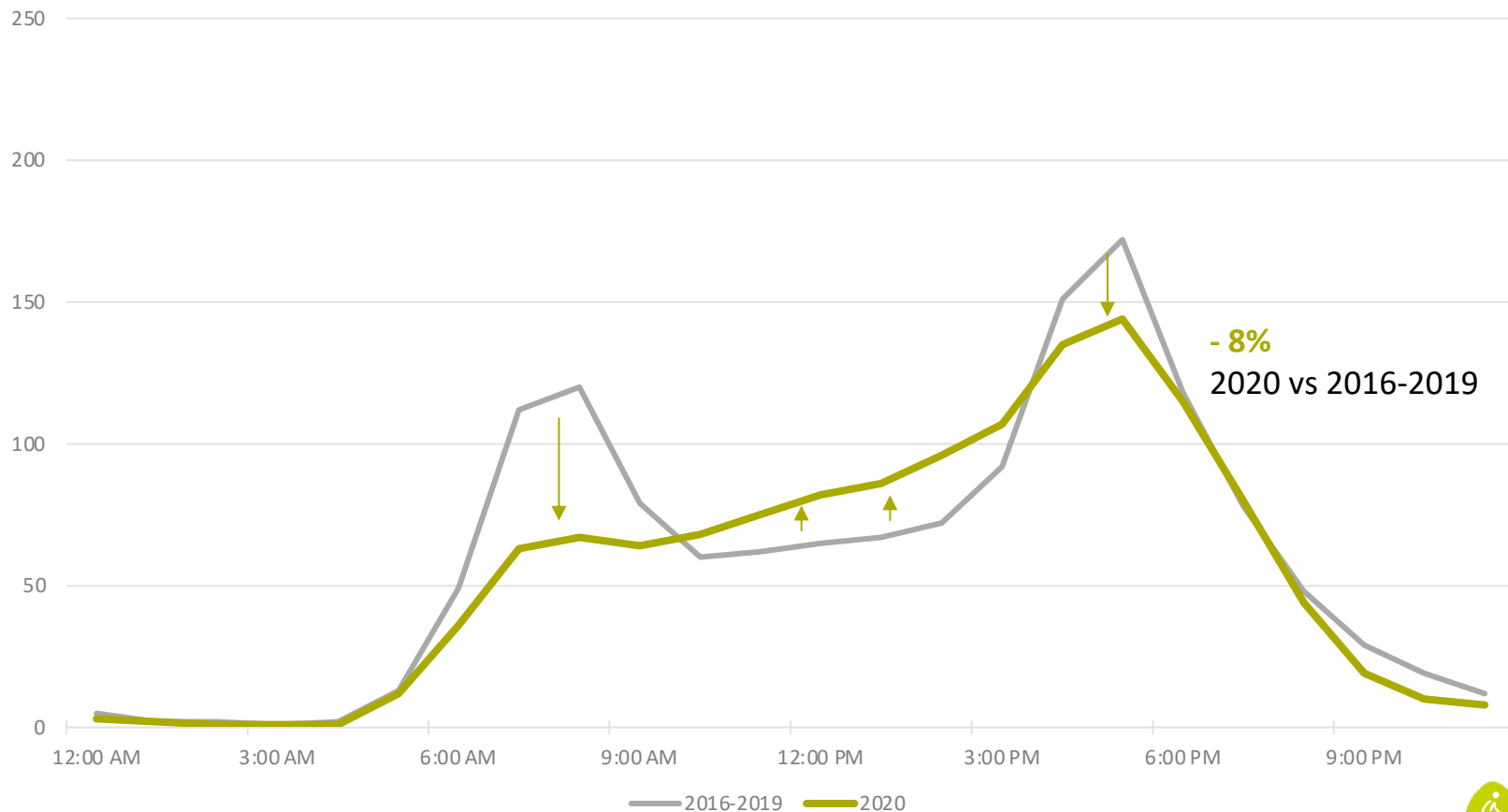
Working from home almost quintupled between 2019 and 2021

City of Madison commute mode share, 2010-2021

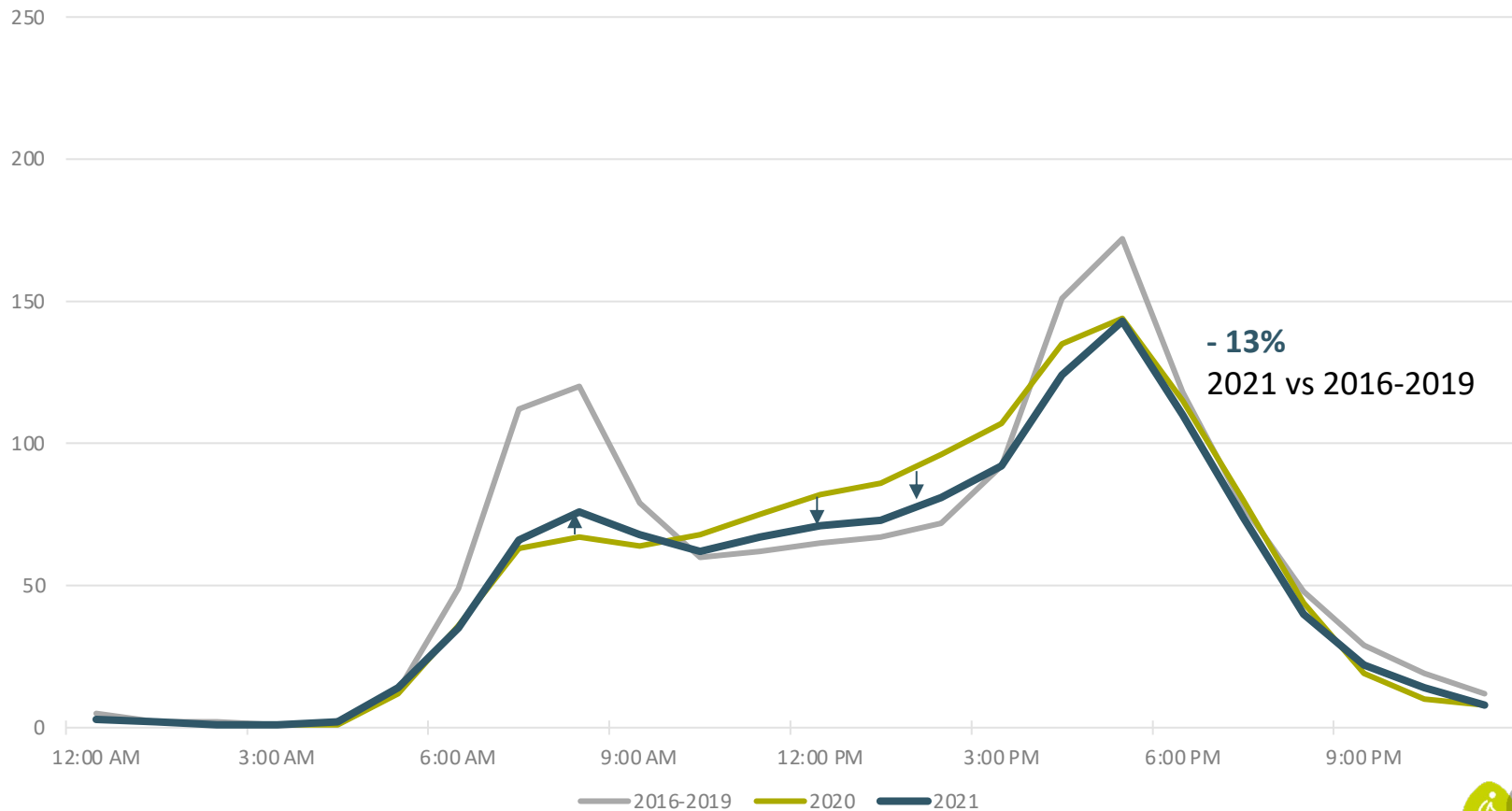


American Community Survey 1-year estimates, Table S0801
Visualization: @HaraldKliems

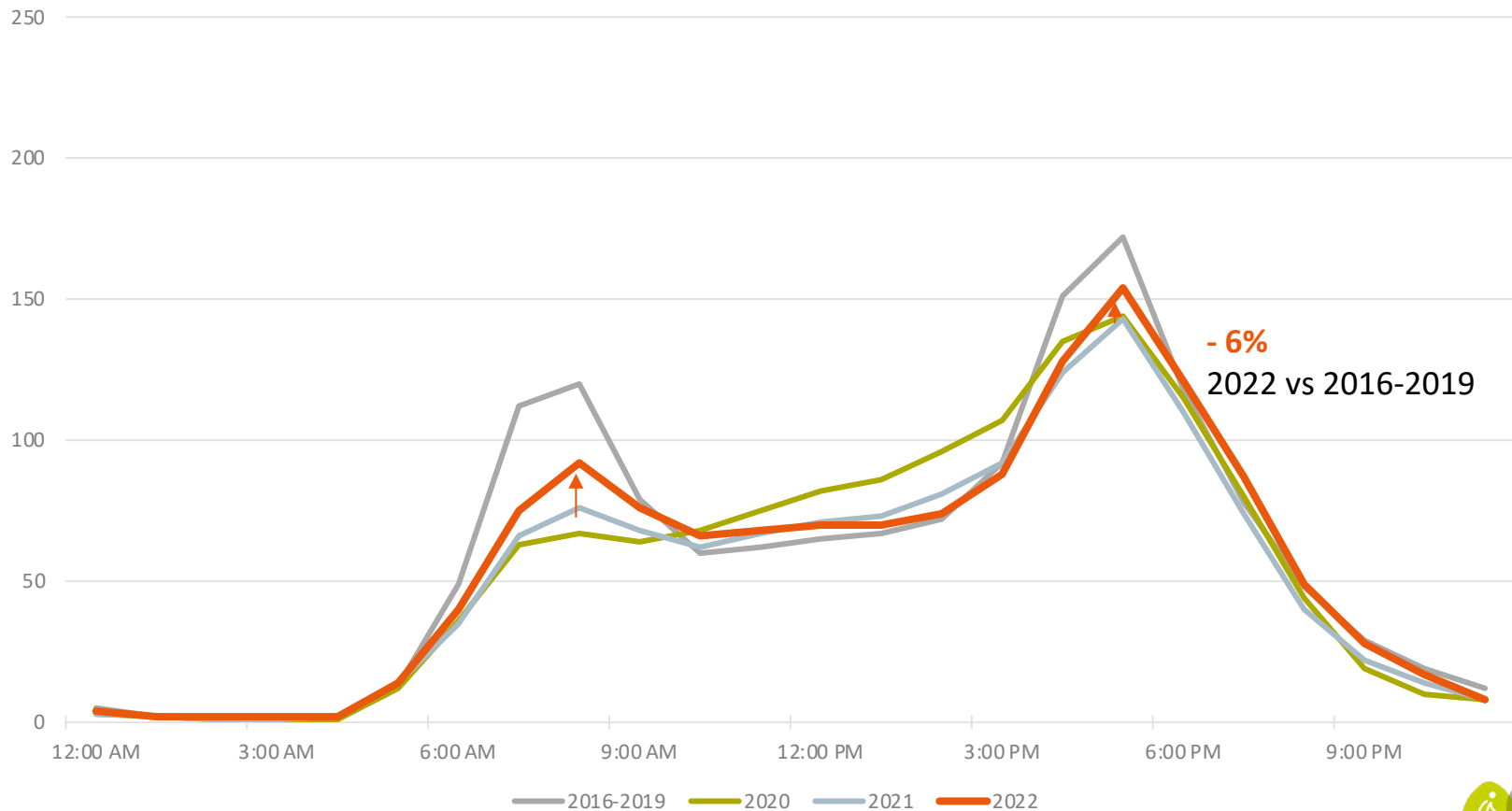
Impact of the Pandemic: weekday bike traffic in Madison



Impact of the Pandemic: weekday bike traffic in Madison



Impact of the Pandemic: weekday bike traffic in Madison



Key data takeaways

With some of the highest overall counts, **Capital City Trail** and **Southwest Path** are important cycling axes connecting Madison and Fitchburg

The **pandemic had a dramatic impact on cycling**, increasing bike counts on weekends and reducing them on weekday commuting hours

Cycling commuting patterns are making a gradual return to Madison



Key advocacy takeaways

Coordinate regionally: Others may already be counting or interested in counting!

Triangulate different data sources and **understand** limitations

Make data available: Advocates, researchers, staff, citizens may have skills and ideas

Don't let yourself be paralyzed by lack (or overabundance) of data!





Photo Source: Wisconsin Bike Week, Steve Arnold (Bike Fitchburg)

A special thanks

to The City of Madison and The City of Fitchburg for providing access to their permanent count data to support the analysis





Counting bikes in Fitchburg, Wisconsin

Steve Arnold, Bike Fitchburg, October 26, 2022



Greetings from Bike Fitchburg!

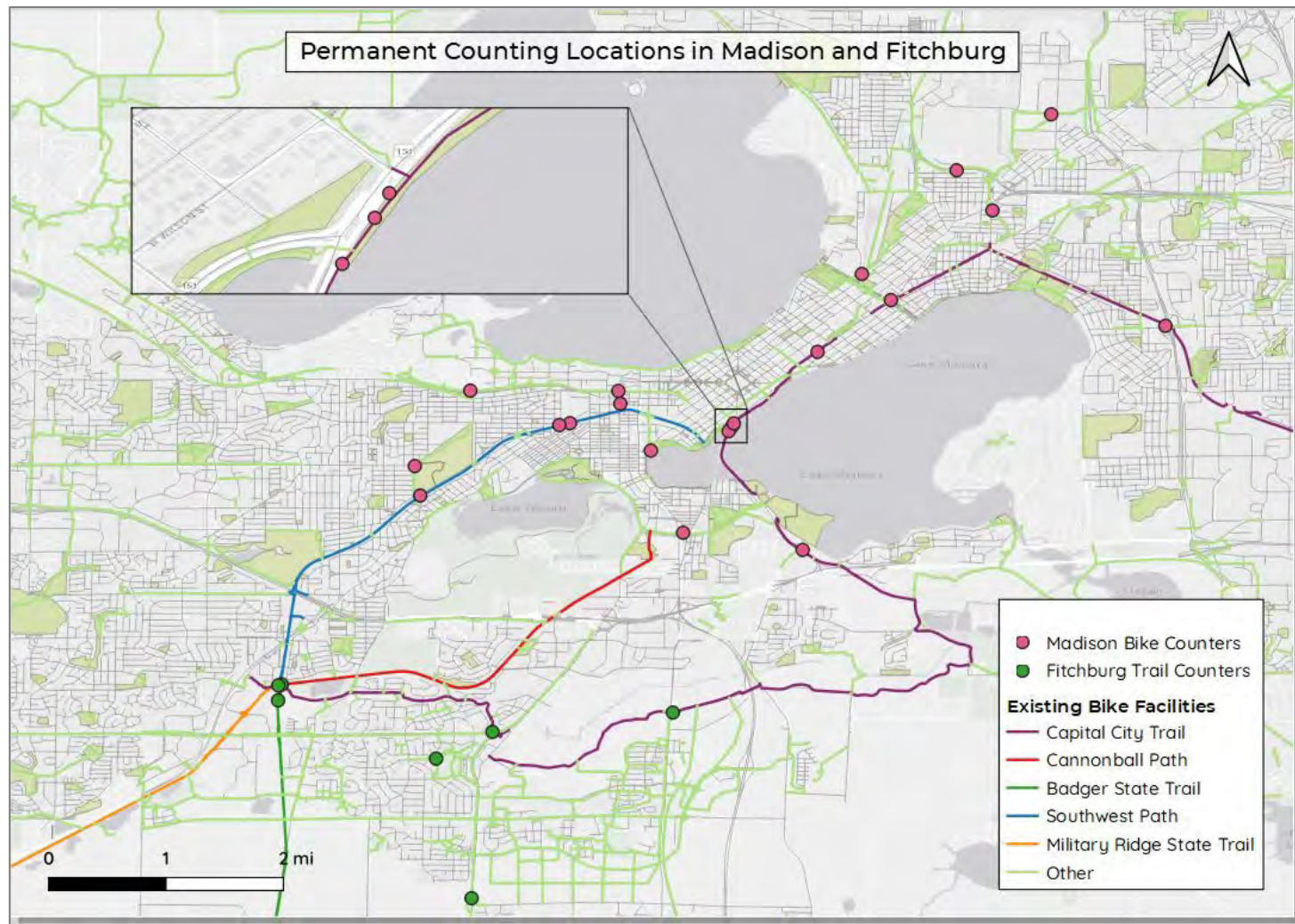
Bike Fitchburg is our local advocacy organization for biking and walking. We're all volunteers working to make biking here safer, easier, and more fun!



Goals for bike counting

Why do this when we could be out riding?

- Strive for Gold Bicycle Friendly Community
- Show we're moving the needle
- Guide municipal and private investment:
 - Justify by showing trends over time.
 - Use spacial distribution to assess equity.



4029

Bike Fitchburg Volunteer Bike Counts

June 7, 2022

Our counts

Start time:

7:30

End time:

7:45

Direction

From

To

Southwest Path

|||||

|||||

We began counts in 2016 after feedback from the Bike League on our 2015 BFC application.

We have June data from 2016, 2018, 2019, and 2022.

We have February data from 2019 and 2022.

Cannonball Path

|||||

|||||

Count are Tuesday of Wisconsin Bike Week or Winter Bike Week from 7-9 a.m. in connection with a commuter station.

We count at the Velo UnderRound, our unique two-level junction of five regional trails as we seek the most impressive numbers.

Cap Cha (Stearns)

Seminole State Trails

|||||

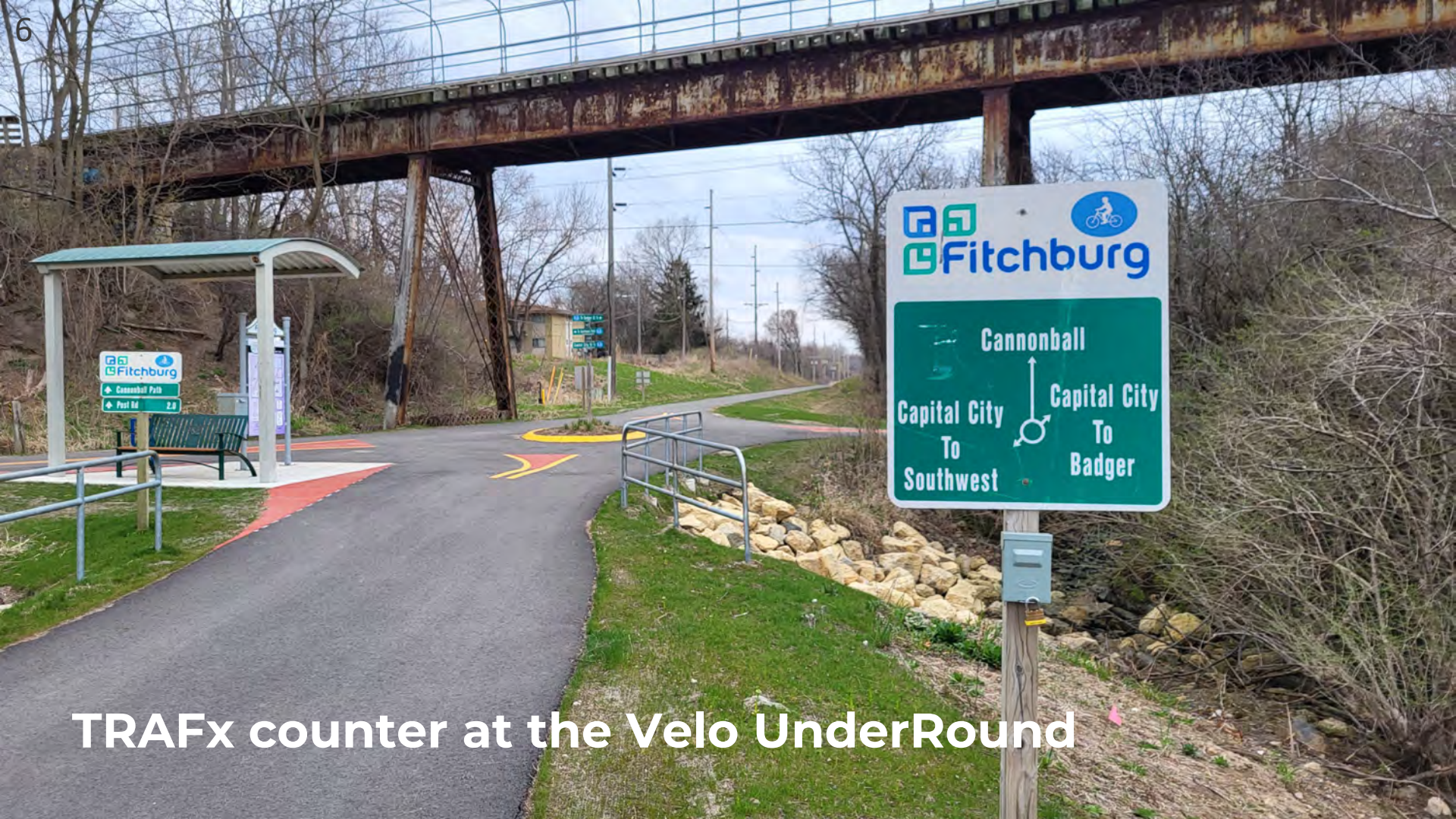
|||||

TRAFx infrared trail counters (people on bikes and walking, large wildlife, etc.) were purchased in 2021 and have been up less than a year.

Badger State Trail

|||||

P
||



 **Fitchburg** 

Cannonball

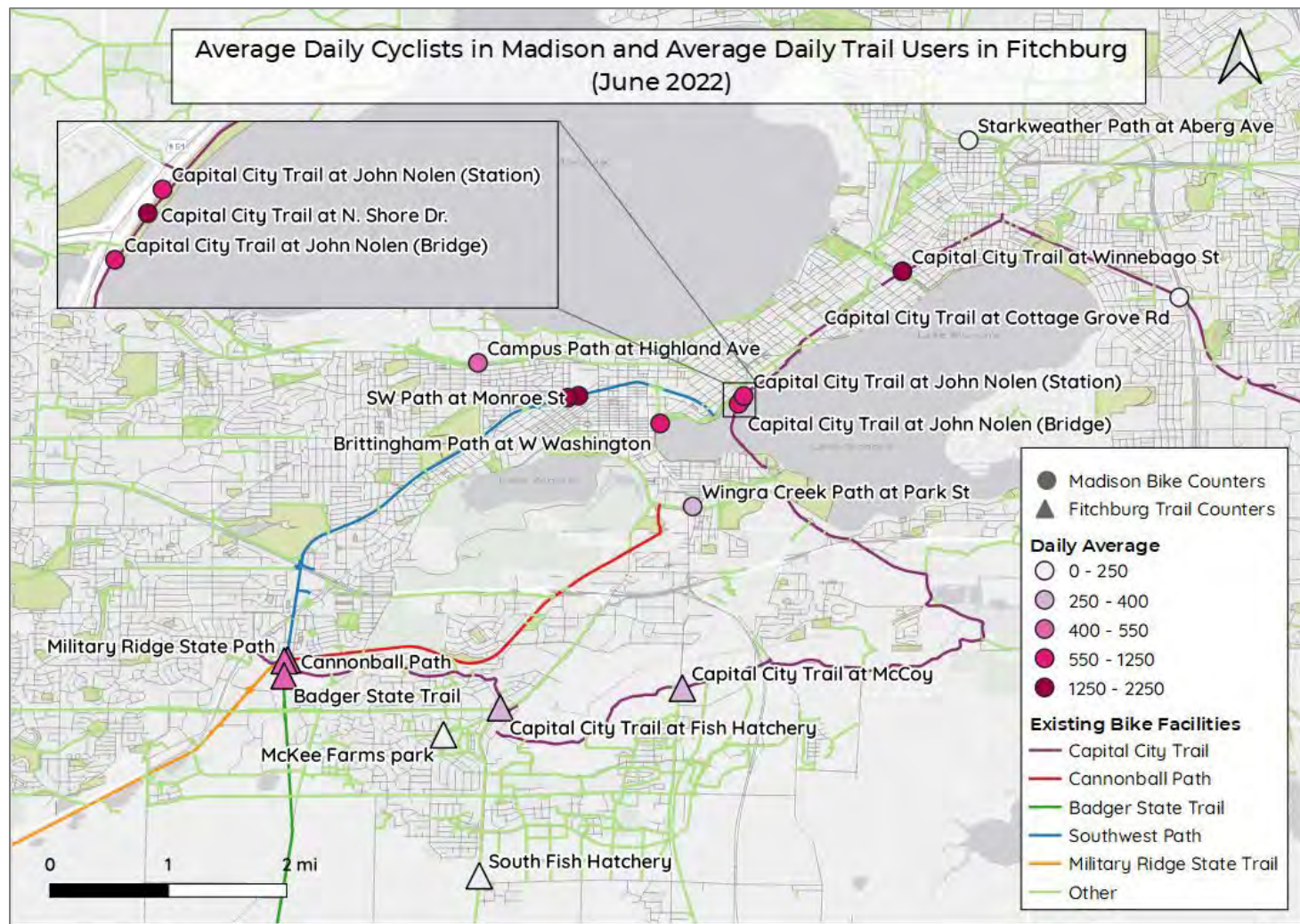
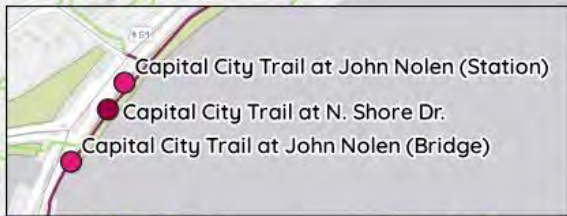
Capital City To Southwest

Capital City To Badger

TRAFx counter at the Velo UnderRound



Average Daily Cyclists in Madison and Average Daily Trail Users in Fitchburg (June 2022)



● Madison Bike Counters
▲ Fitchburg Trail Counters

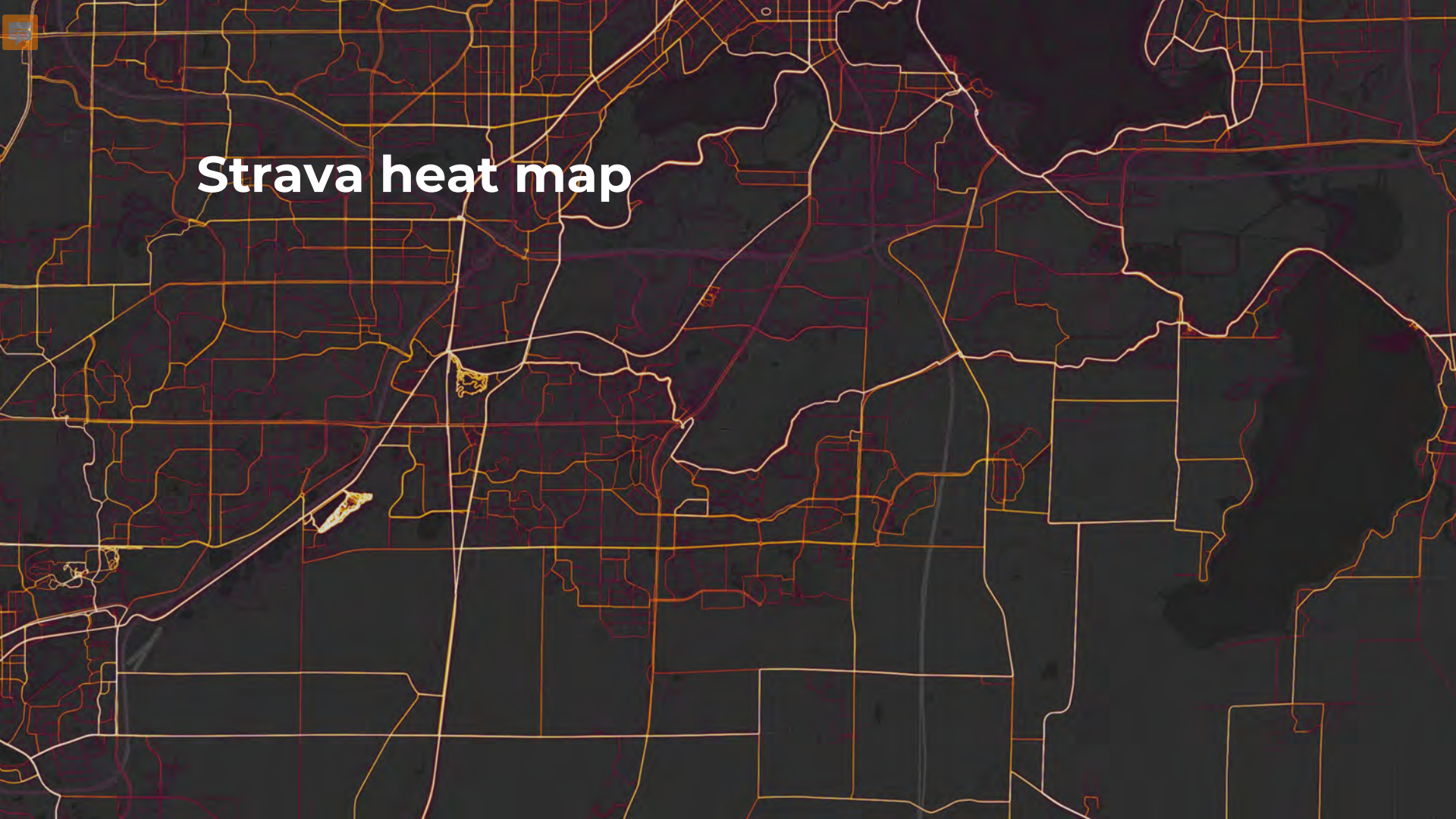
Daily Average

- 0 - 250
- 250 - 400
- 400 - 550
- 550 - 1250
- 1250 - 2250

Existing Bike Facilities

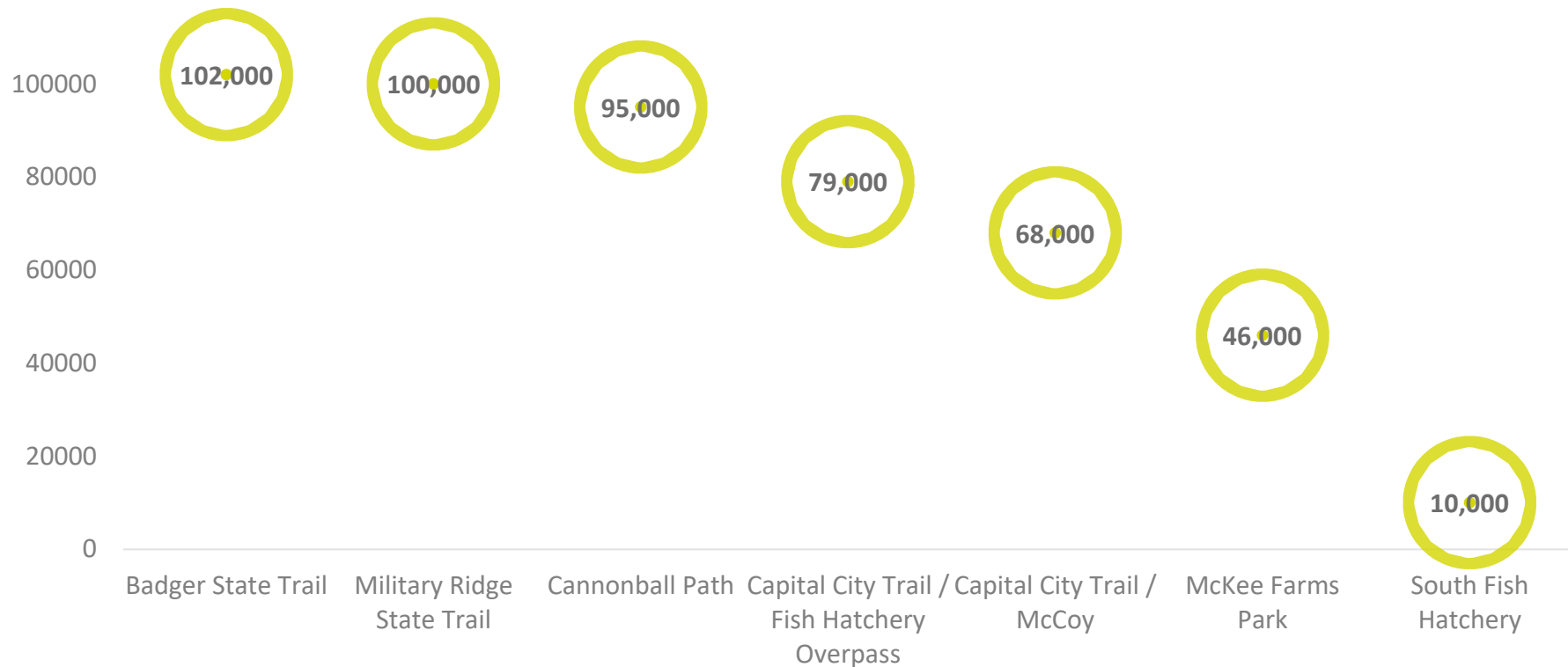
- Capital City Trail
- Cannonball Path
- Badger State Trail
- Southwest Path
- Military Ridge State Trail
- Other

Strava heat map





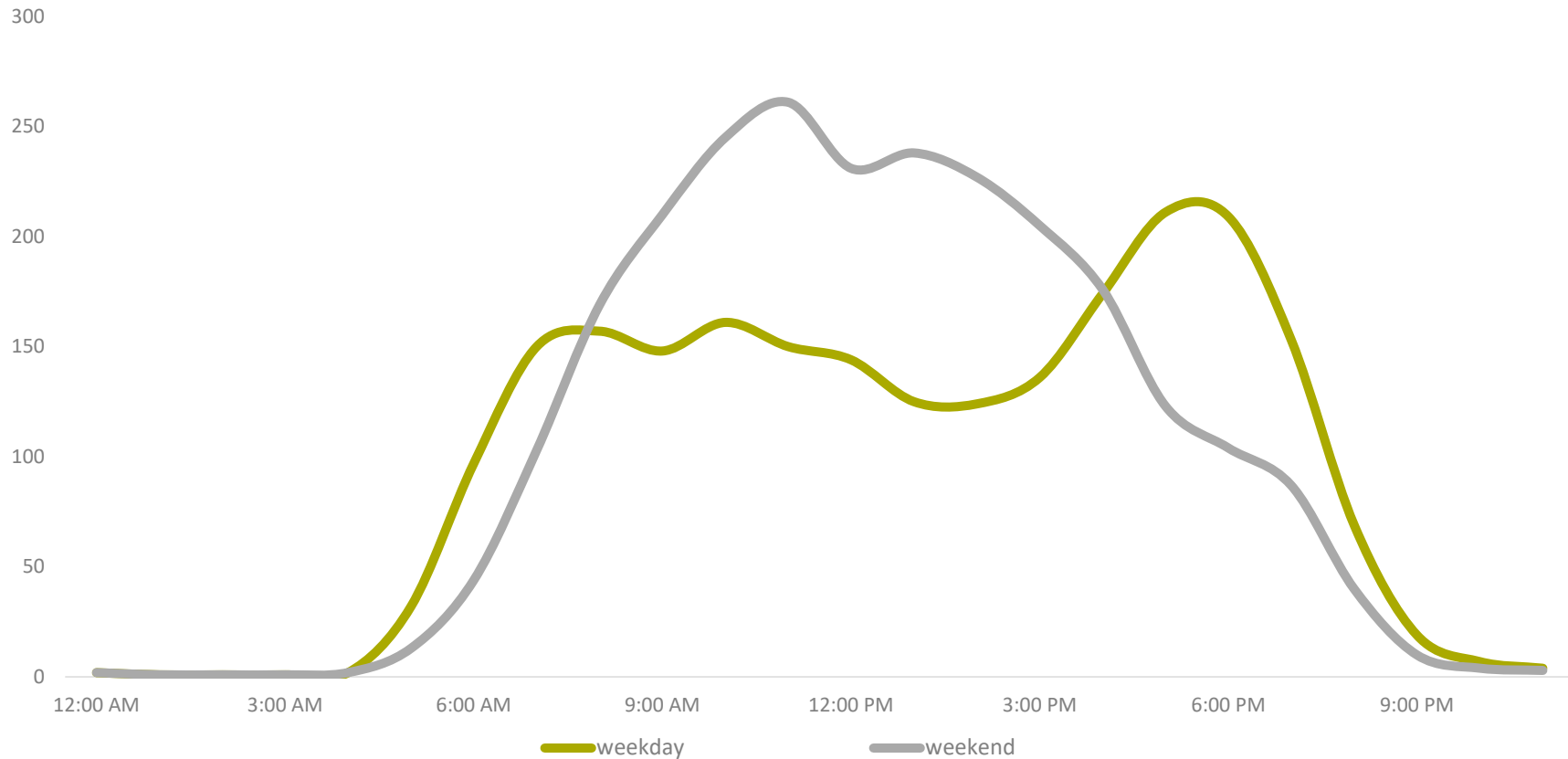
Annual trail users in Fitchburg



Estimated counts using extrapolation methods (Oct. 1st, 2021 – Sept. 30th, 2022)



Average hourly trail counts in Fitchburg (June – Sep 2022)



Based on hourly counts provided by the City of Fitchburg



The Velo UnderRound

Connecting Fitchburg, Madison, Verona, and other nearby locations, **the Velo UnderRound is a critical intersection for the region**. Through a bike roundabout and a two-level interchange, it links five regional trails – the Southwest Path, Cannonball Trail, Capital City State Trail, Badger State Trail and Military Ridge Trail.

Average annual daily bikes estimate at the roundabout, based on
2-hour AM manual counts taken on a yearly basis:

479 bikes

2018-2019

669 bikes

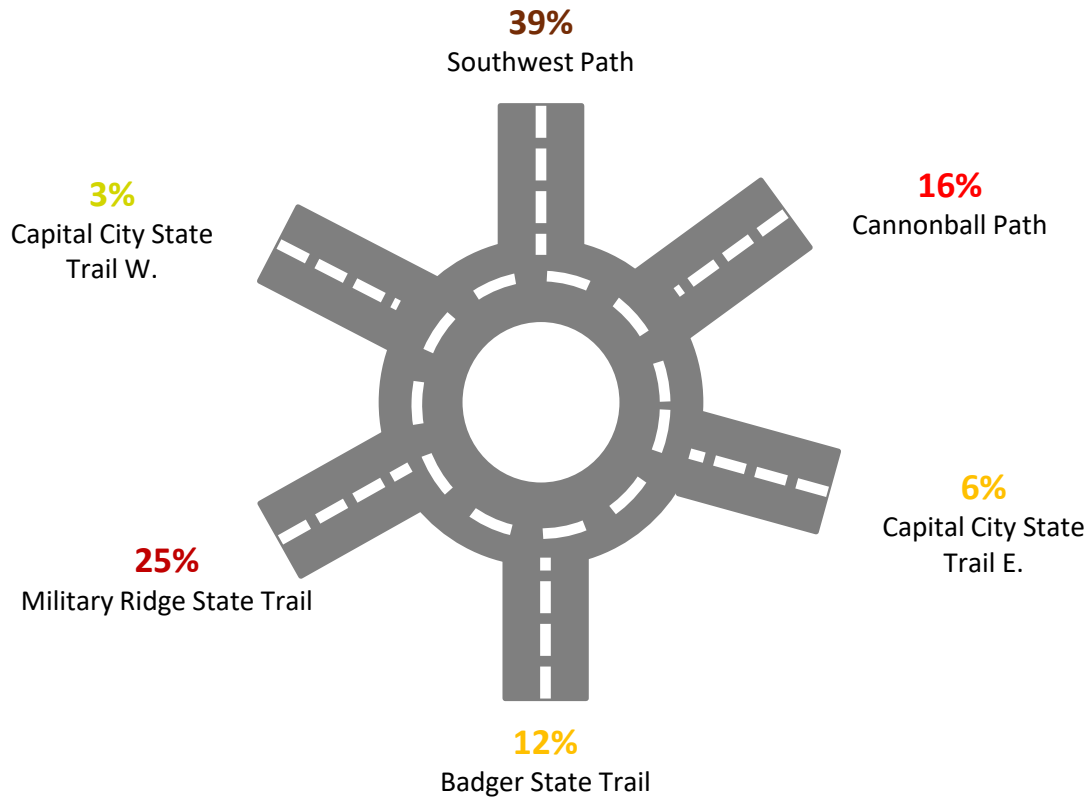
2022



Photo Source: The Velo UnderRound, Steve Arnold (Bike Fitchburg)



Distribution of cyclists at the Velo UnderRound



Based on 2-hour AM manual counts taken on a yearly basis
provided by Bike Fitchburg

Fitchburg conclusions

- Put a stake in the ground with manual counts and build on that. It only takes a few hours and a clipboard. (Coffee and bagels helped, too!)
- Consistency helped, but weather affects single-day counts.
- We counted at commuter hot spot to get bigger numbers.
- Counting the busiest facilities is easy. It's challenging to get city-wide numbers due to dispersed biking.
- Almost any data is better for a Bicycle Friendly Community application than the default American Community Survey.



Photo Source: Wisconsin Bike Week, Steve Arnold (Bike Fitchburg)

A special thanks

to the cities of Madison and Fitchburg for providing access to their permanent count data to support the analysis

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